

### 1. GLAST Orbiting Earth

*Photo: Stanford Linear Accelerator Center*

The Gamma-ray Large Area Space Telescope is an orbiting scientific instrument for detecting high-energy gamma rays. When GLAST launches in 2007, astronomers will study how black holes can accelerate jets of gas outward at fantastic speeds, physicists will study subatomic particles at energies far greater than those seen in ground-based particle accelerators, and cosmologists will gain valuable information about the birth and early evolution of the Universe.

### 2. Simulation of Higgs Decay in the CMS Detector

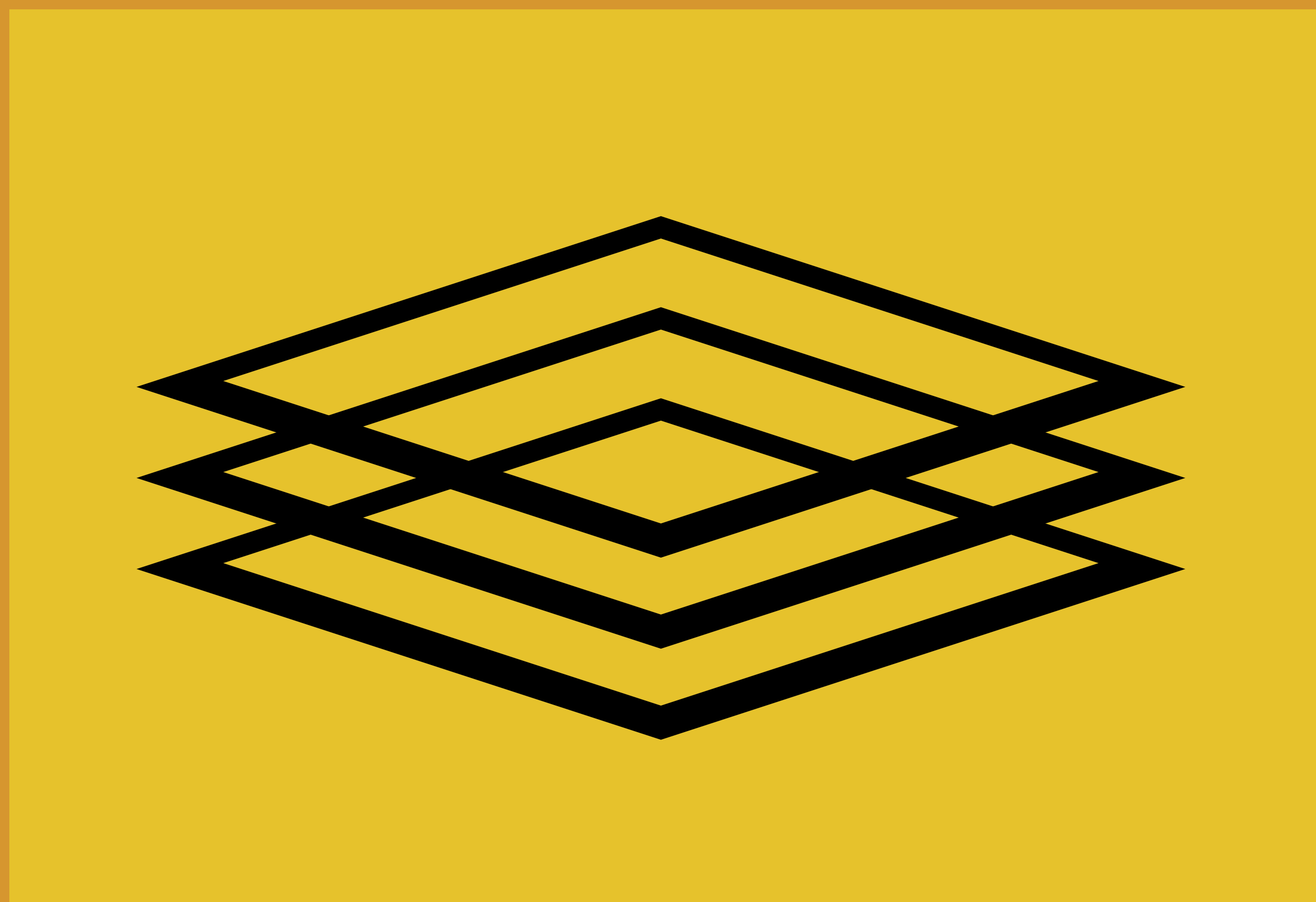
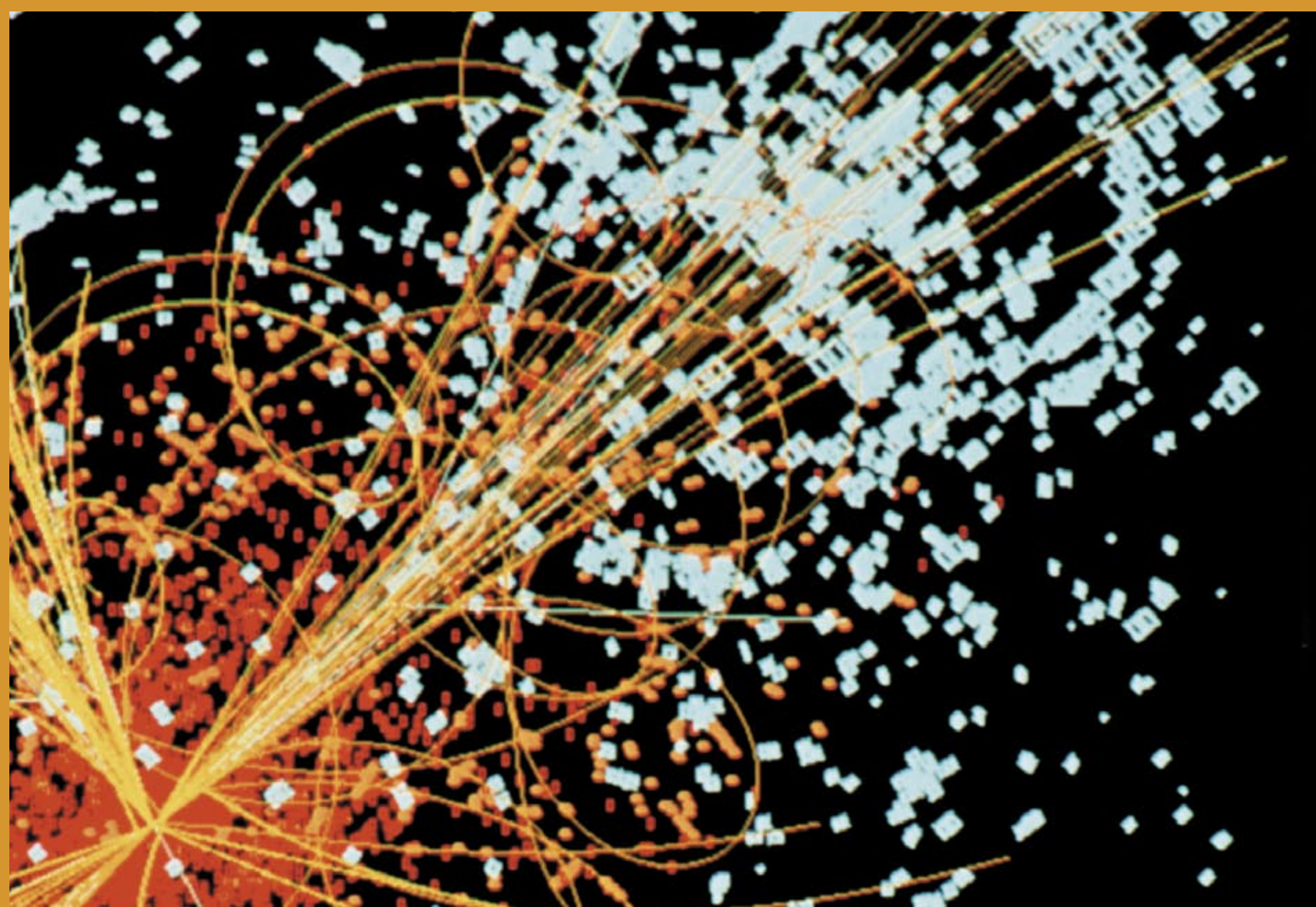
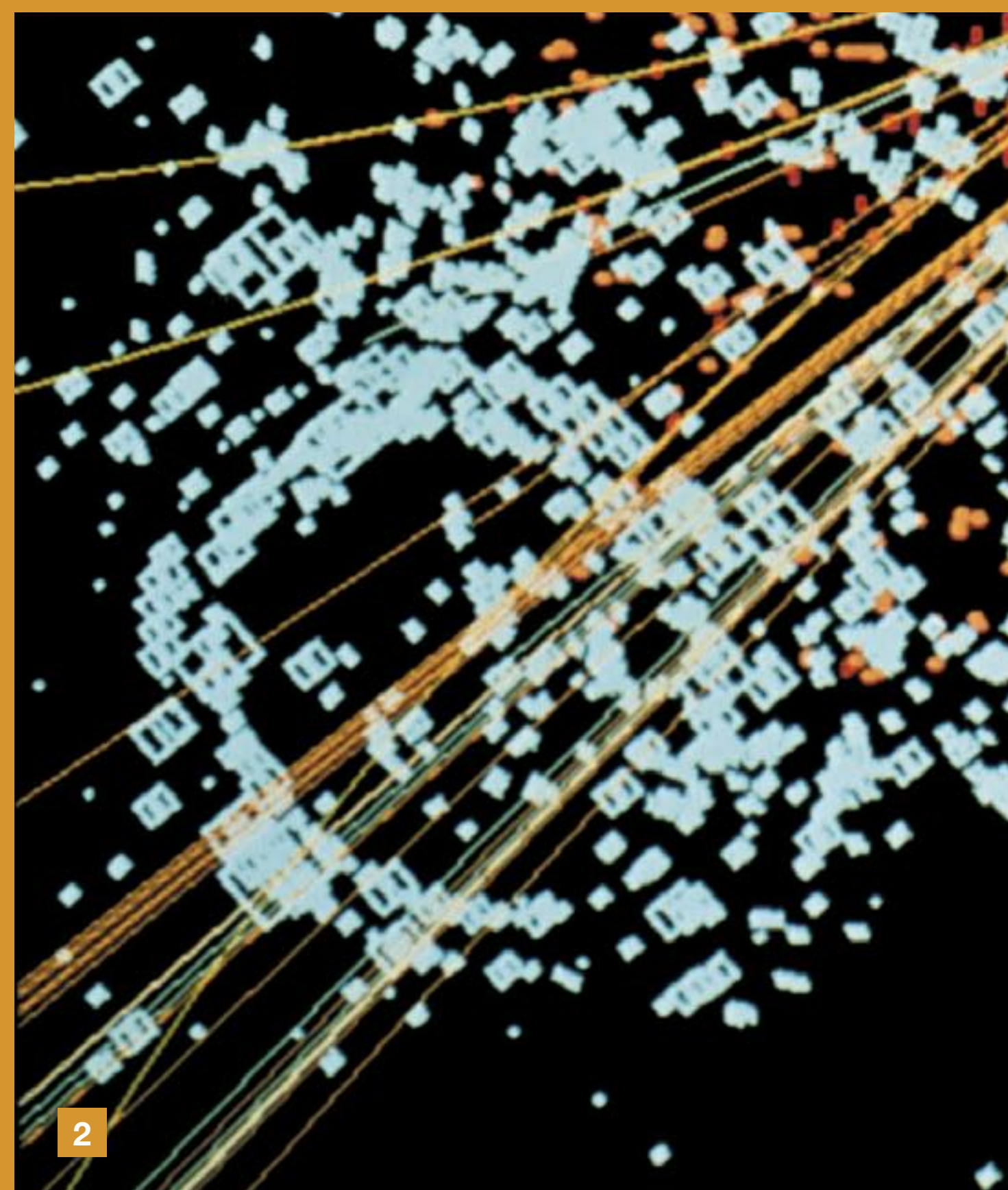
*Copyright CERN*

The ATLAS and CMS particle physics experiments will explore the fundamental nature of matter and the basic forces that shape our universe at the Large Hadron Collider, currently being built in Geneva, Switzerland. These large international collaborations—each includes about 2,000 researchers from more than 150 institutions in over 30 countries—invest heavily in the capabilities and development of the Open Science Grid.

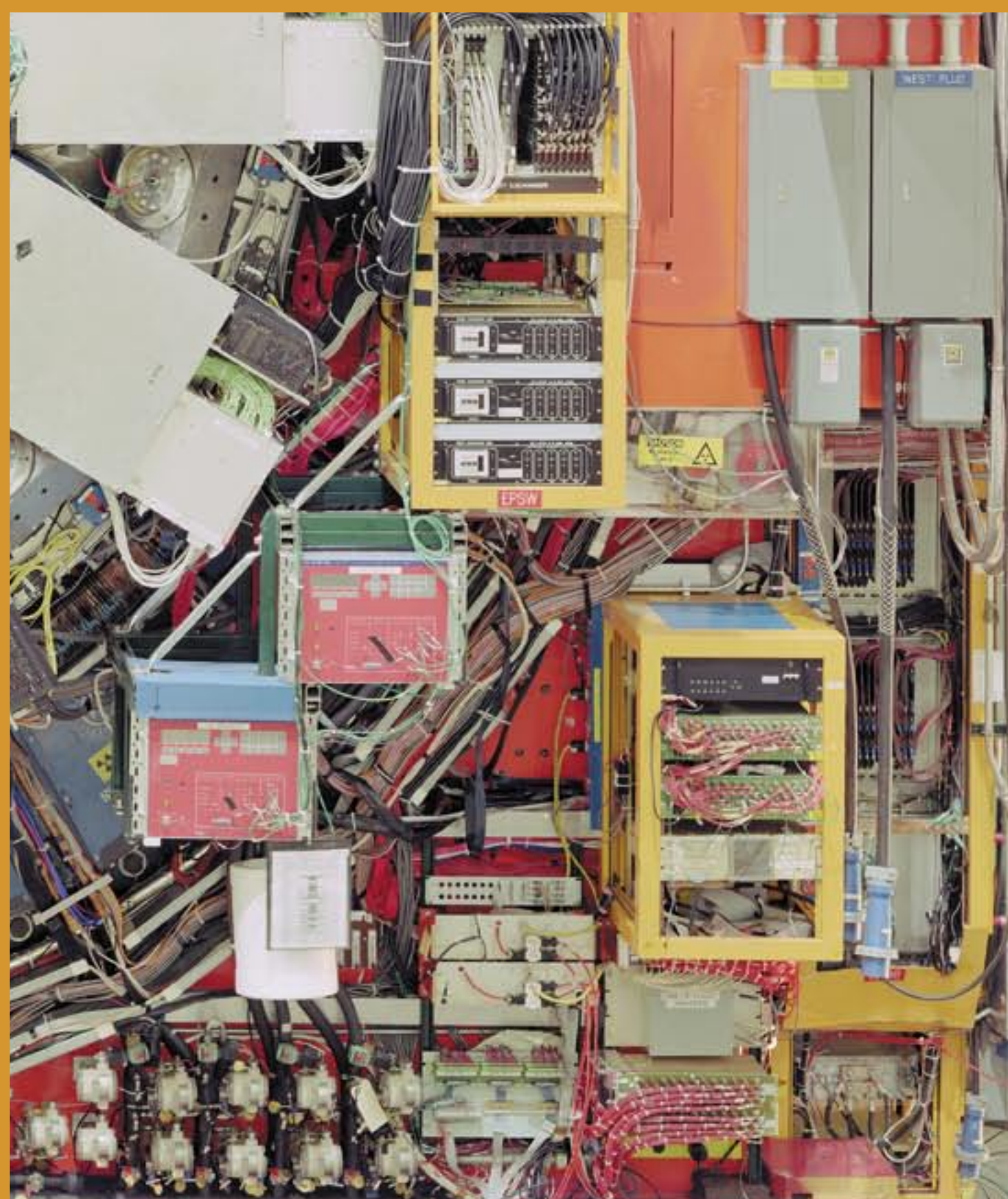
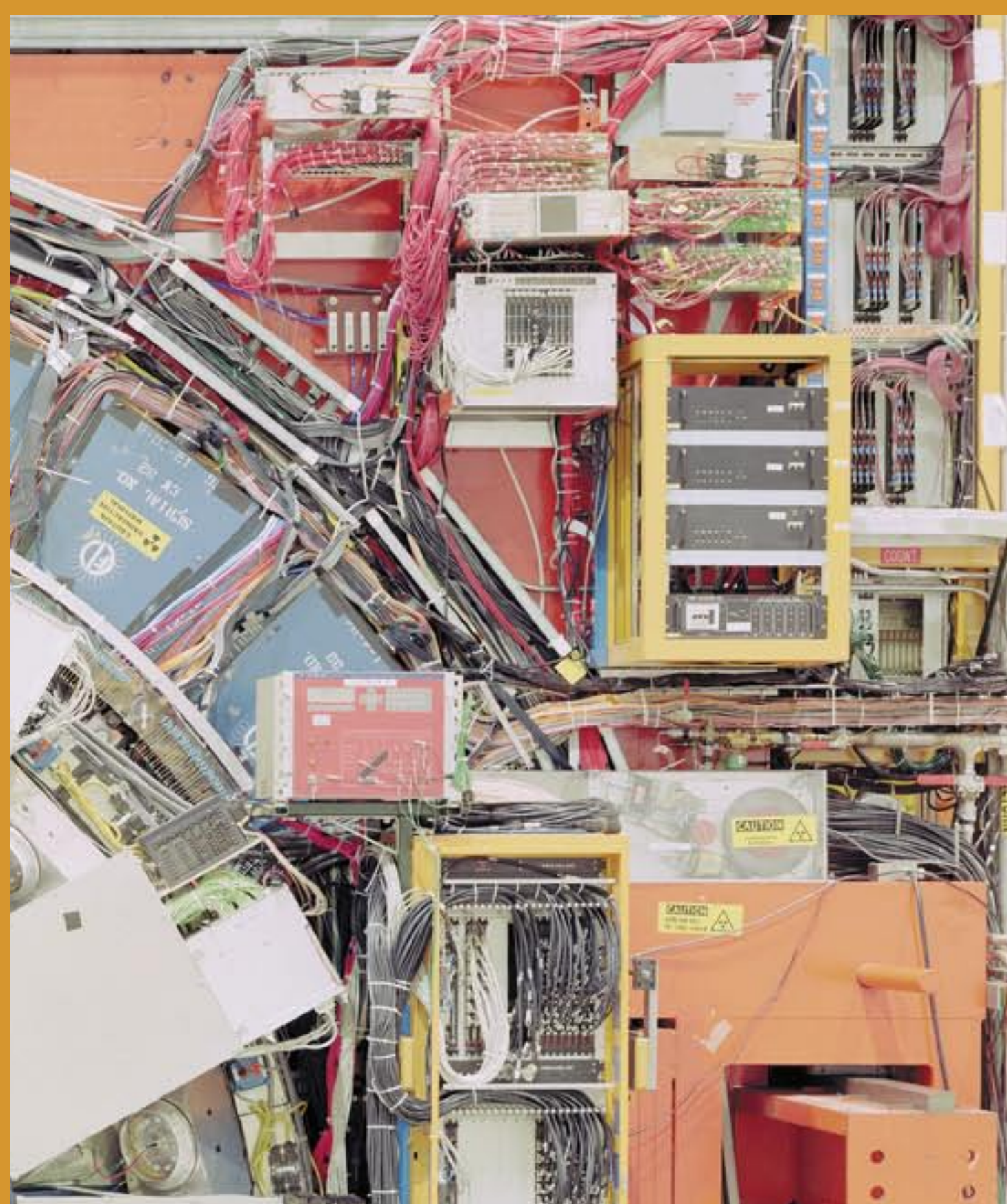
### 3. CDF Detector

*Photo: Visual Media Services/Fermilab*

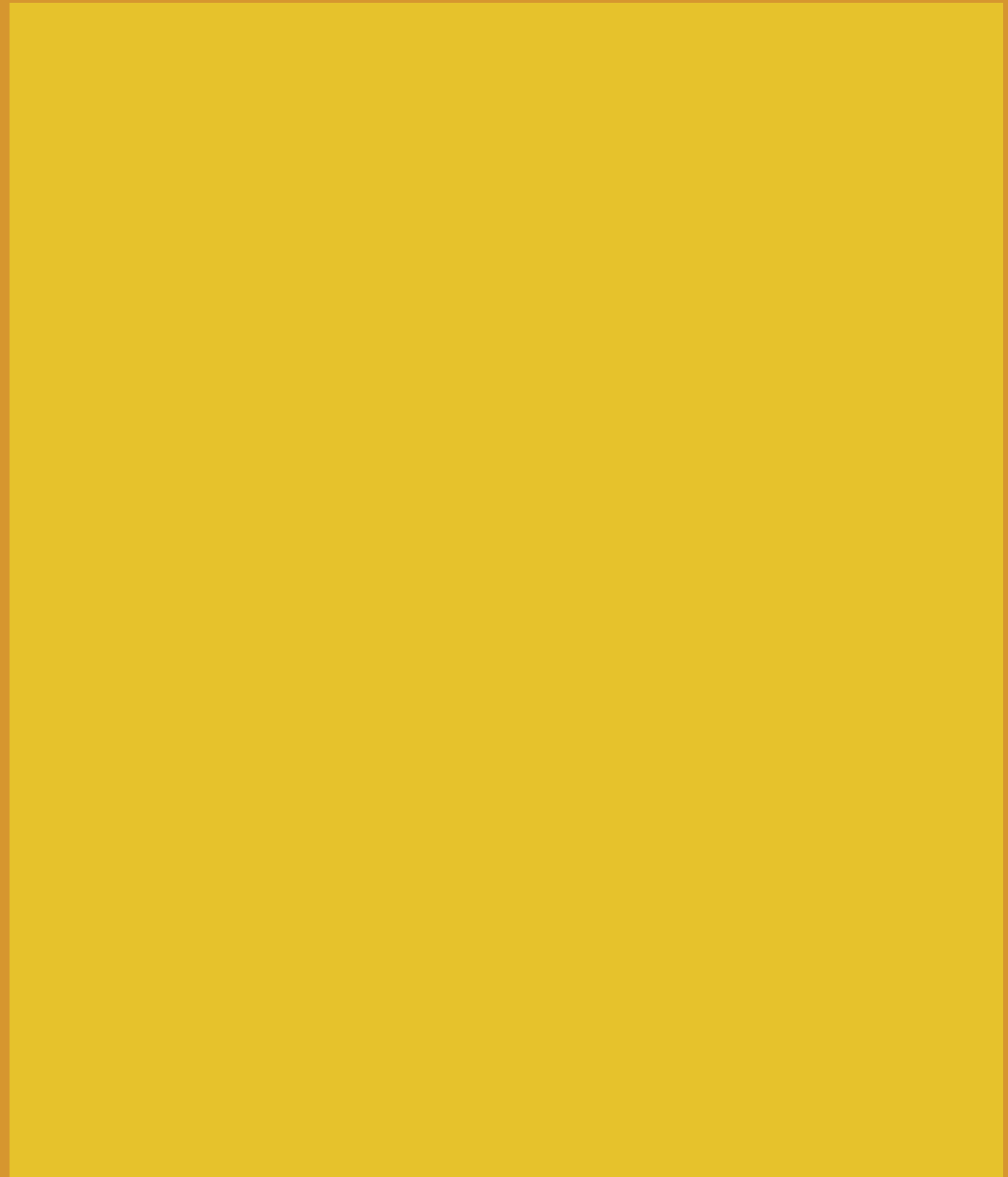
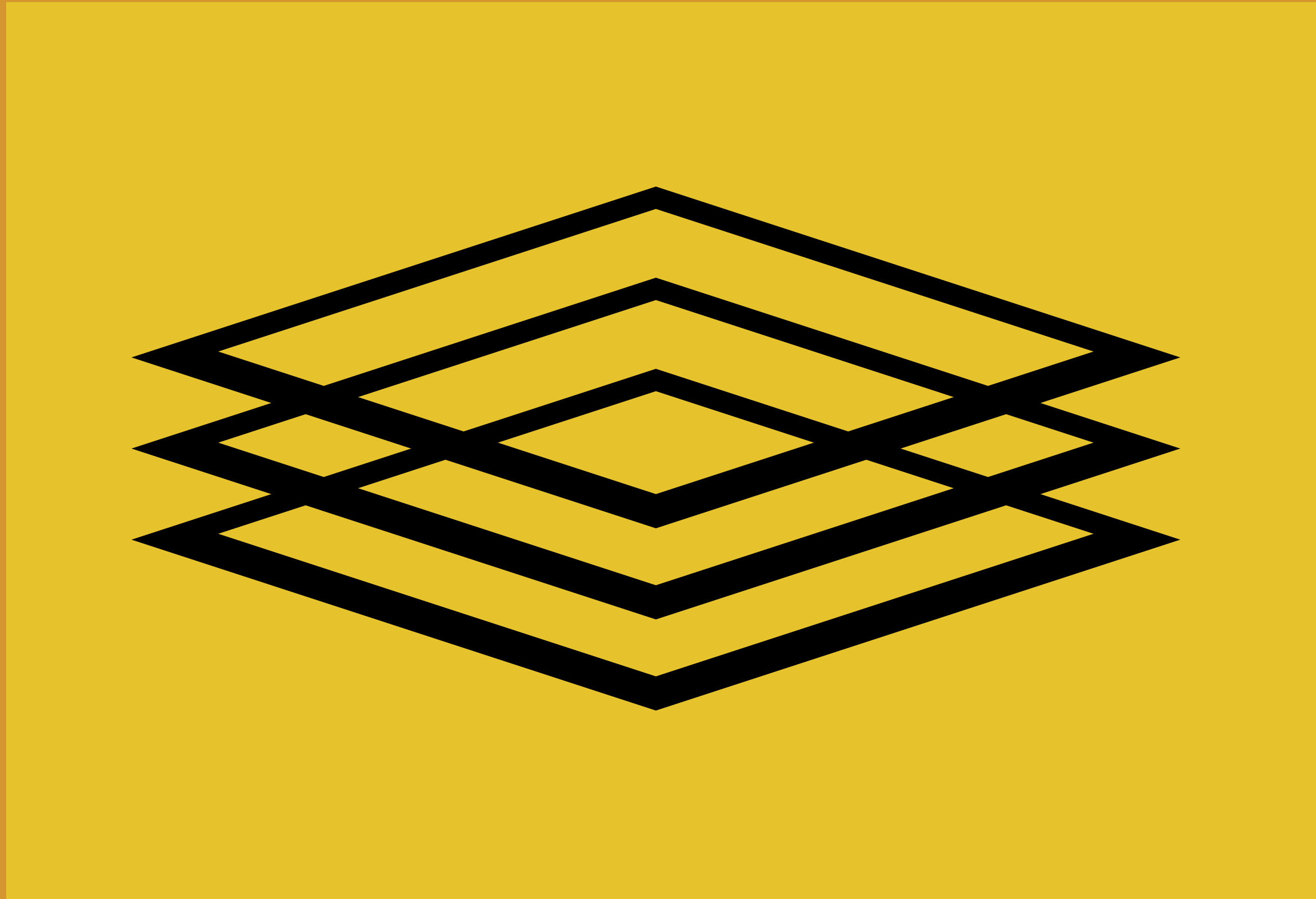
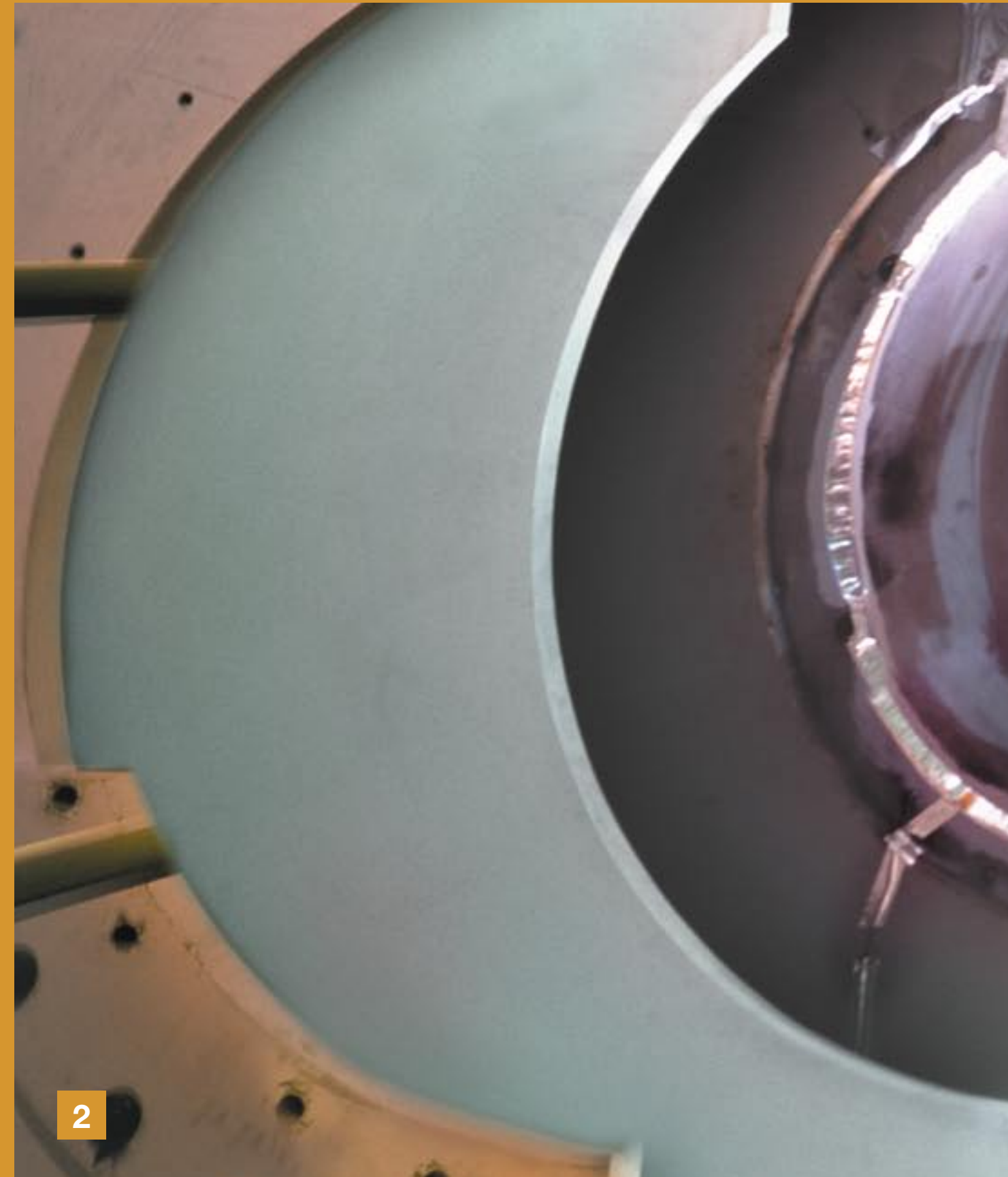
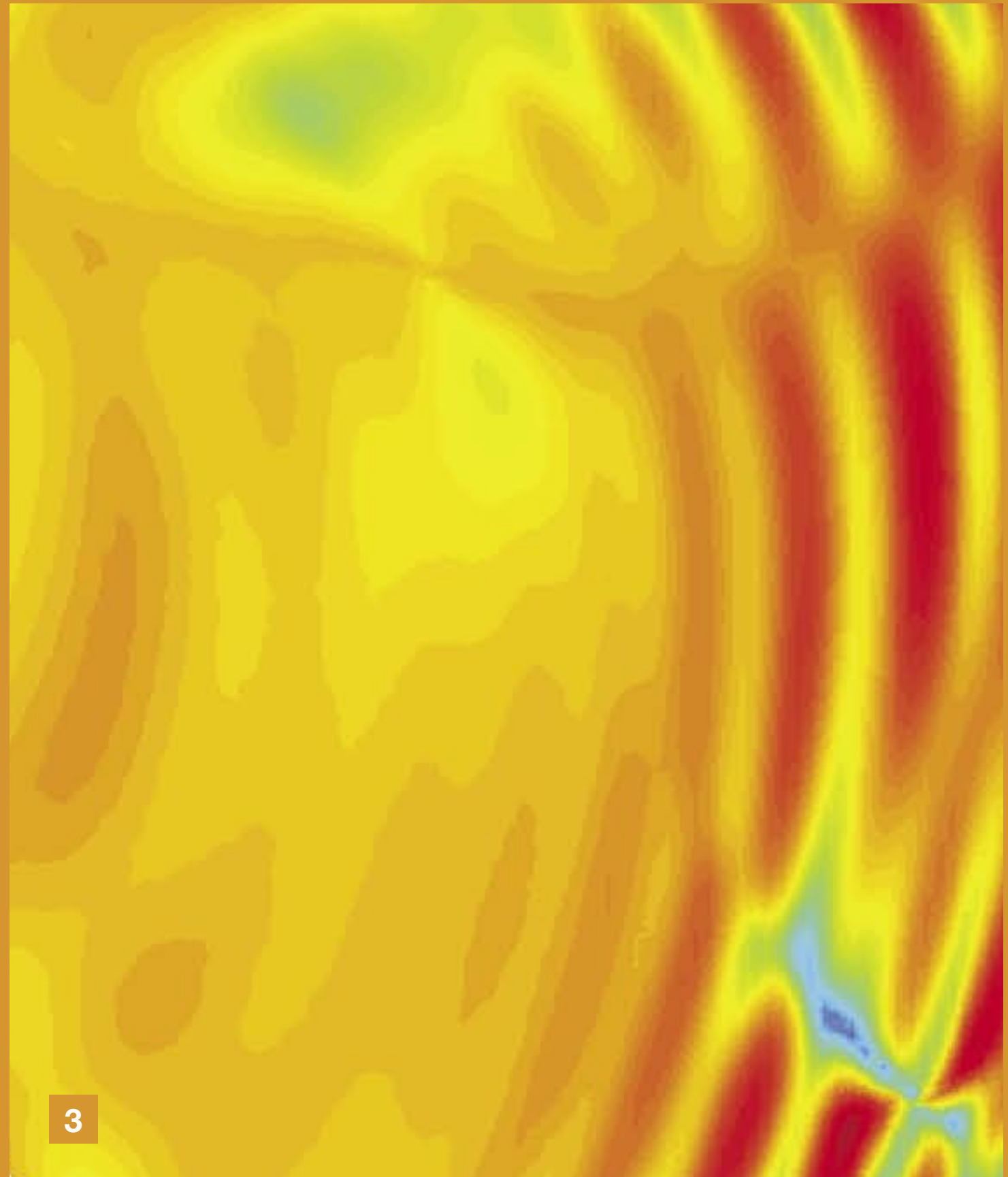
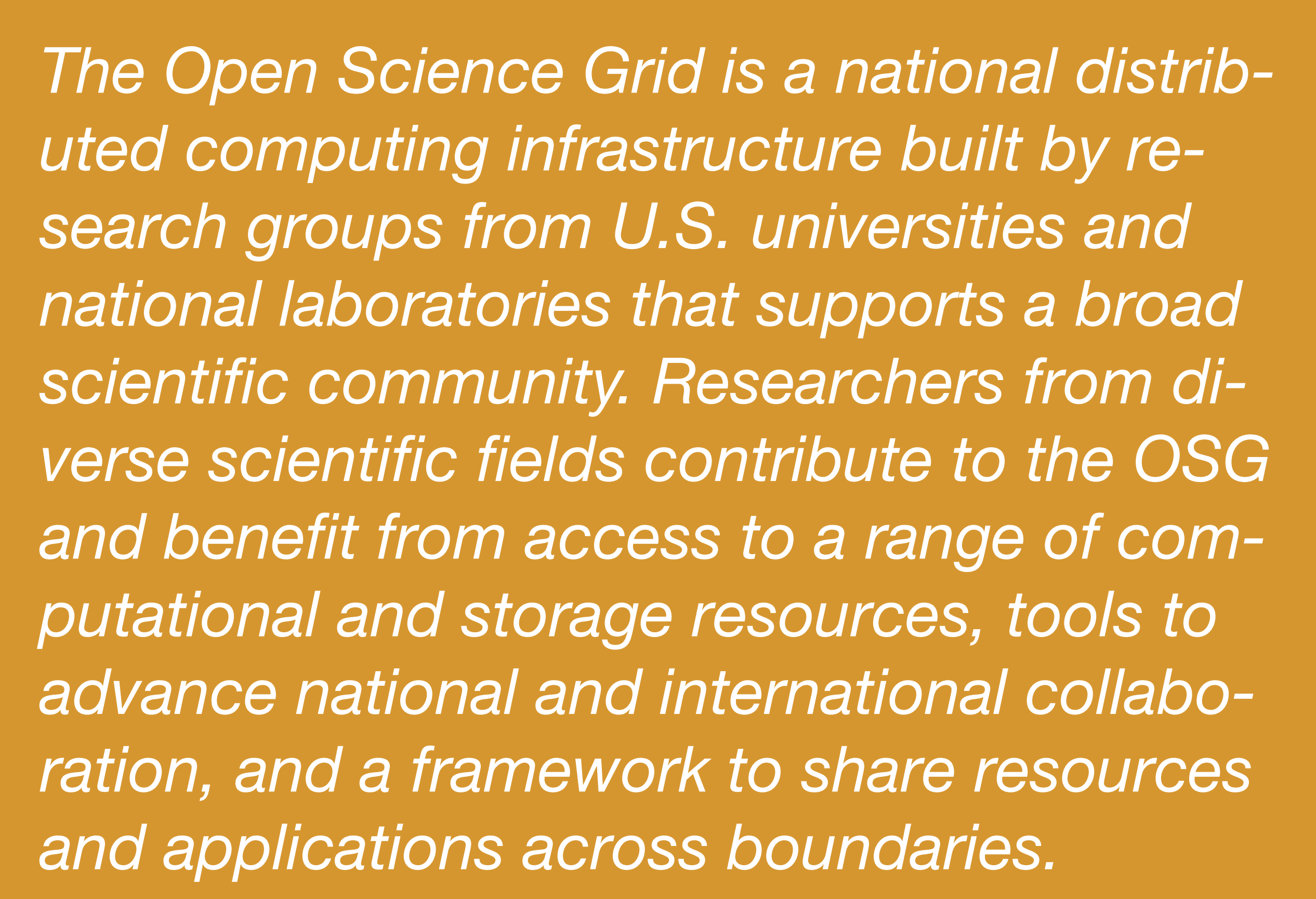
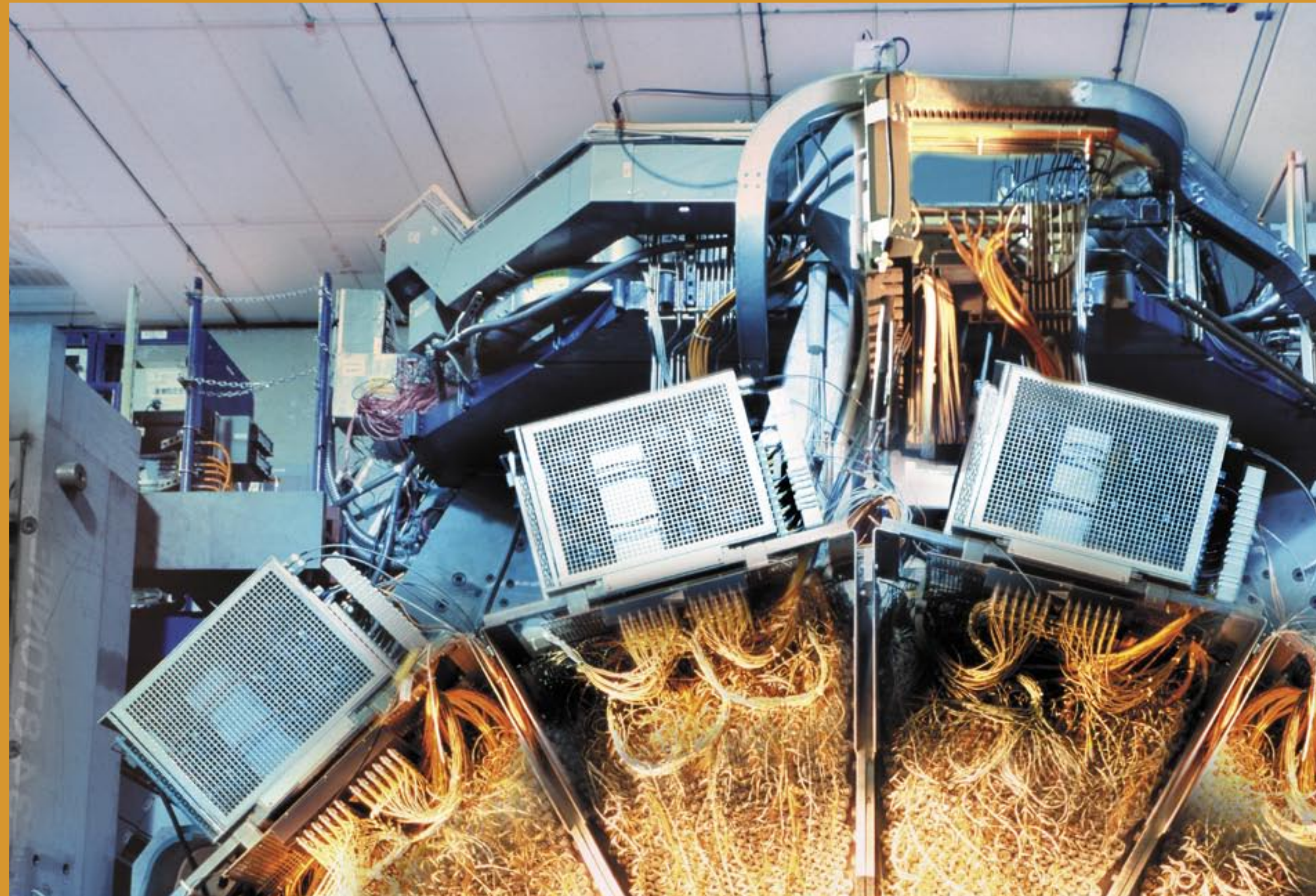
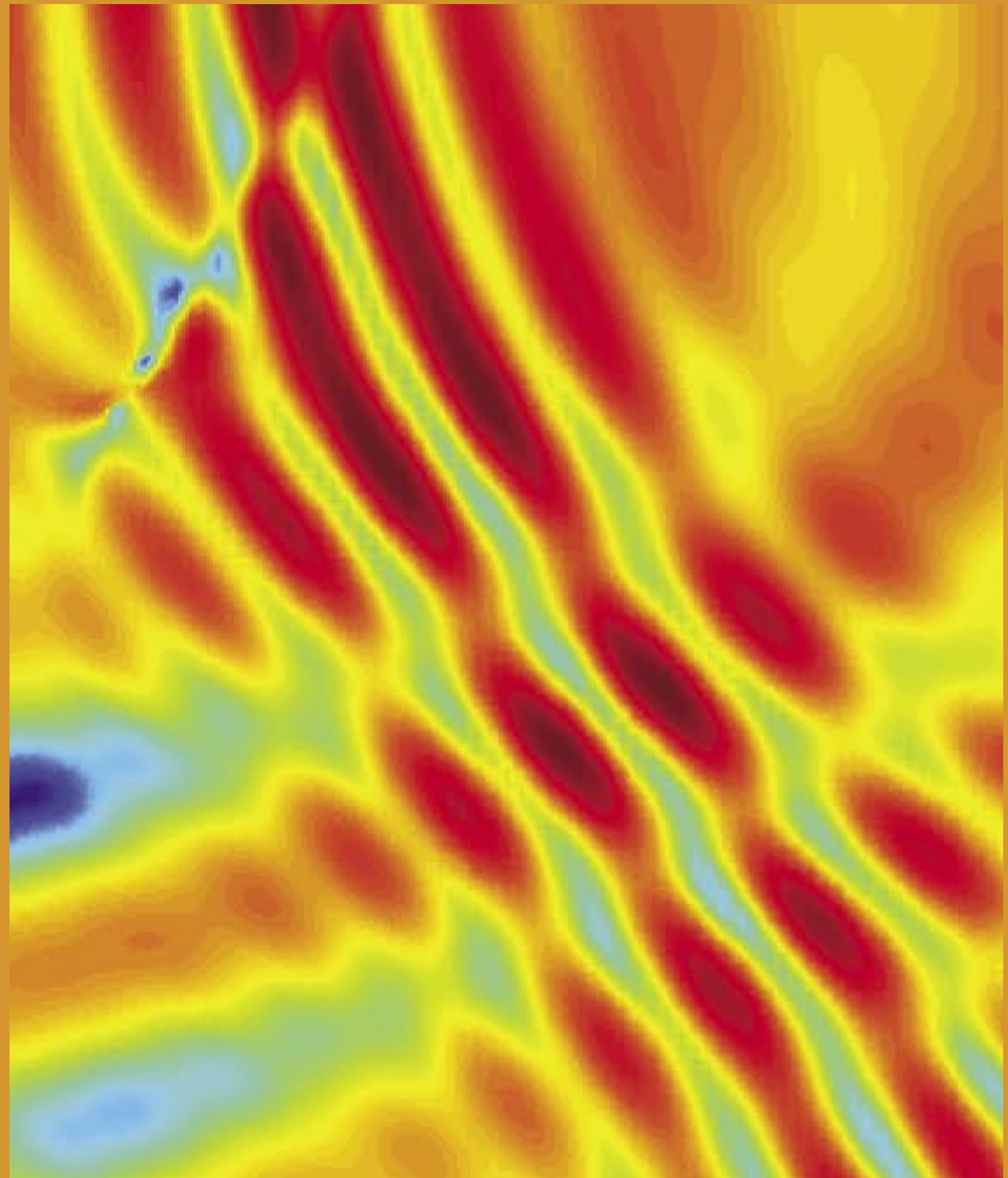
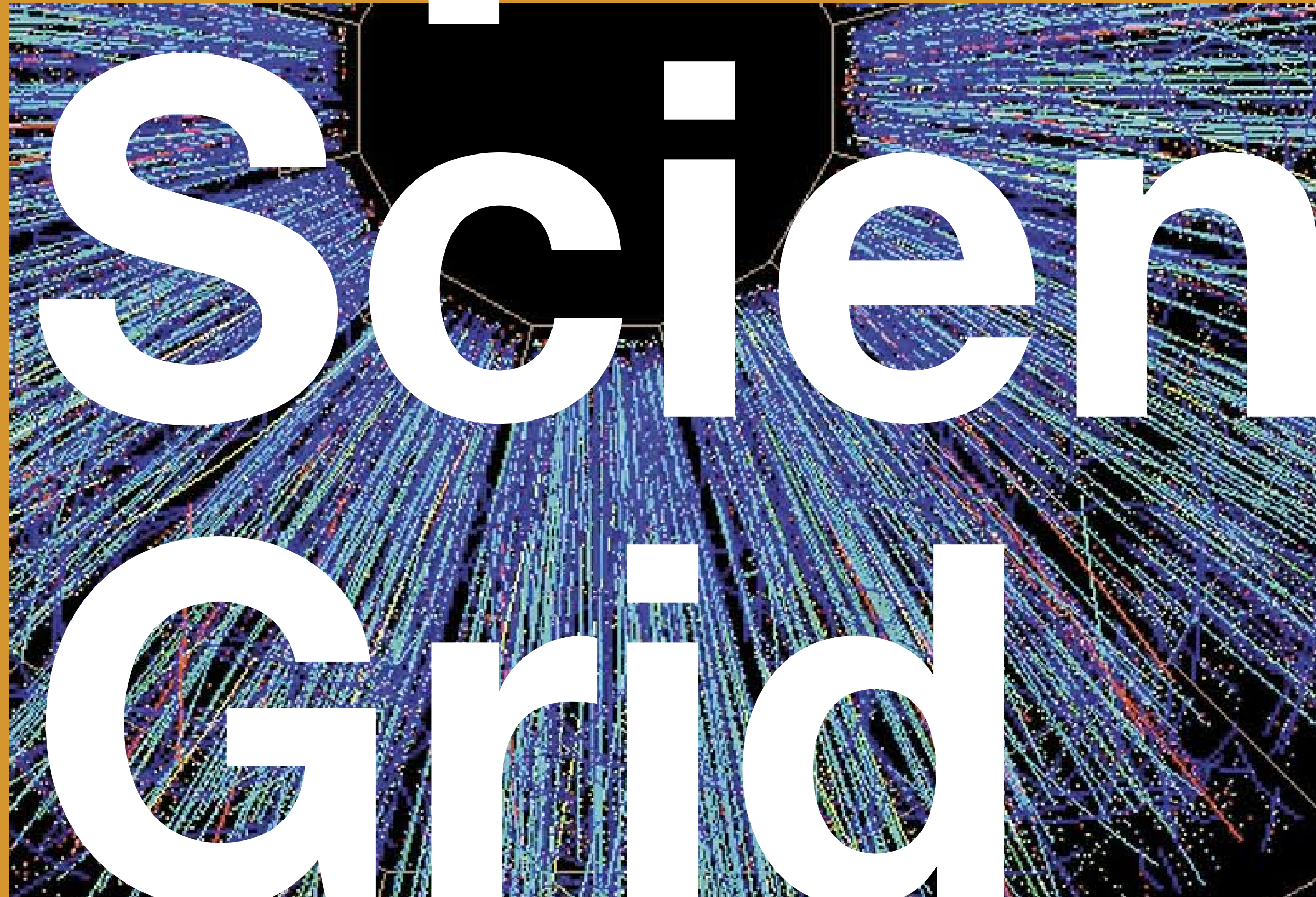
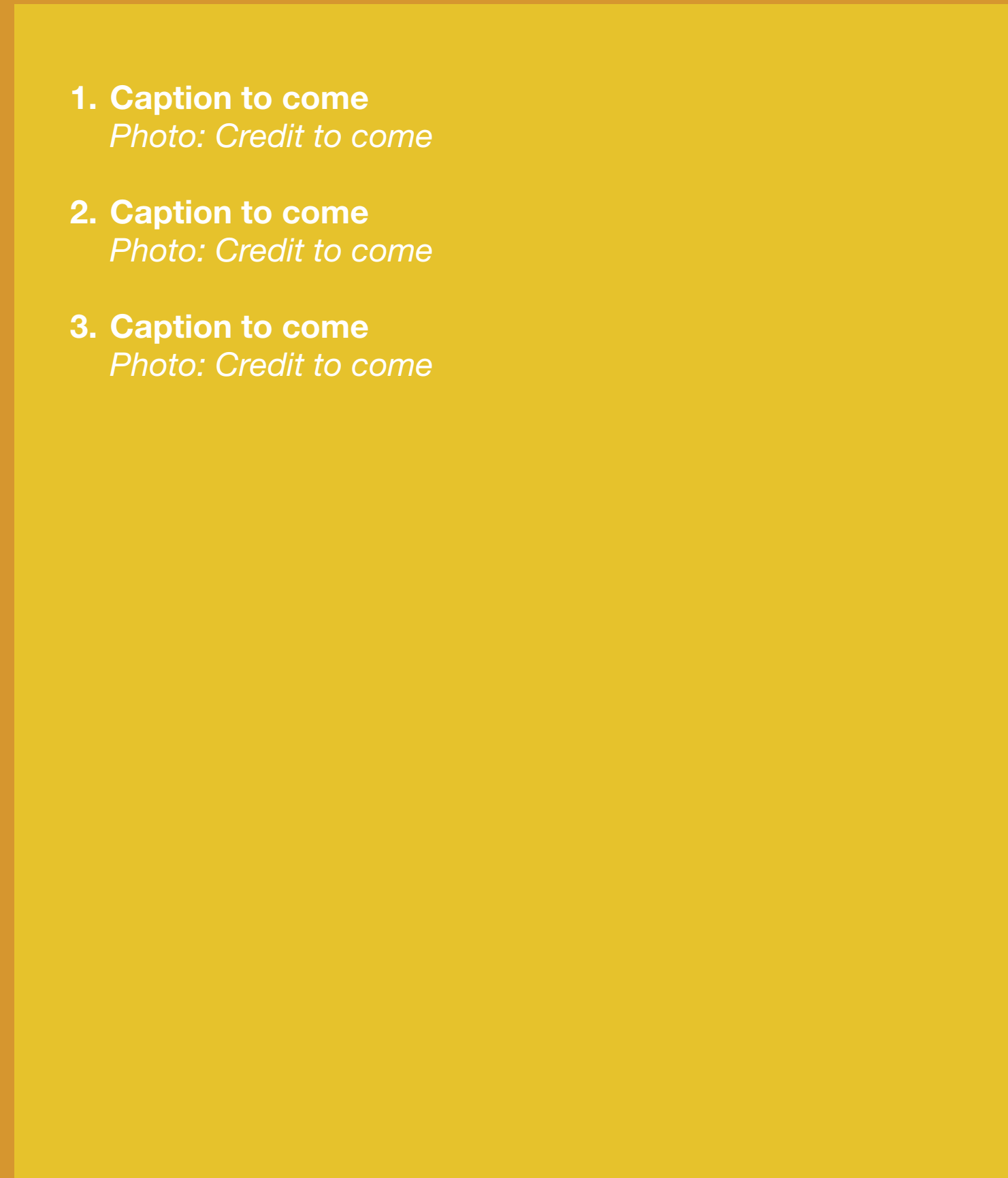
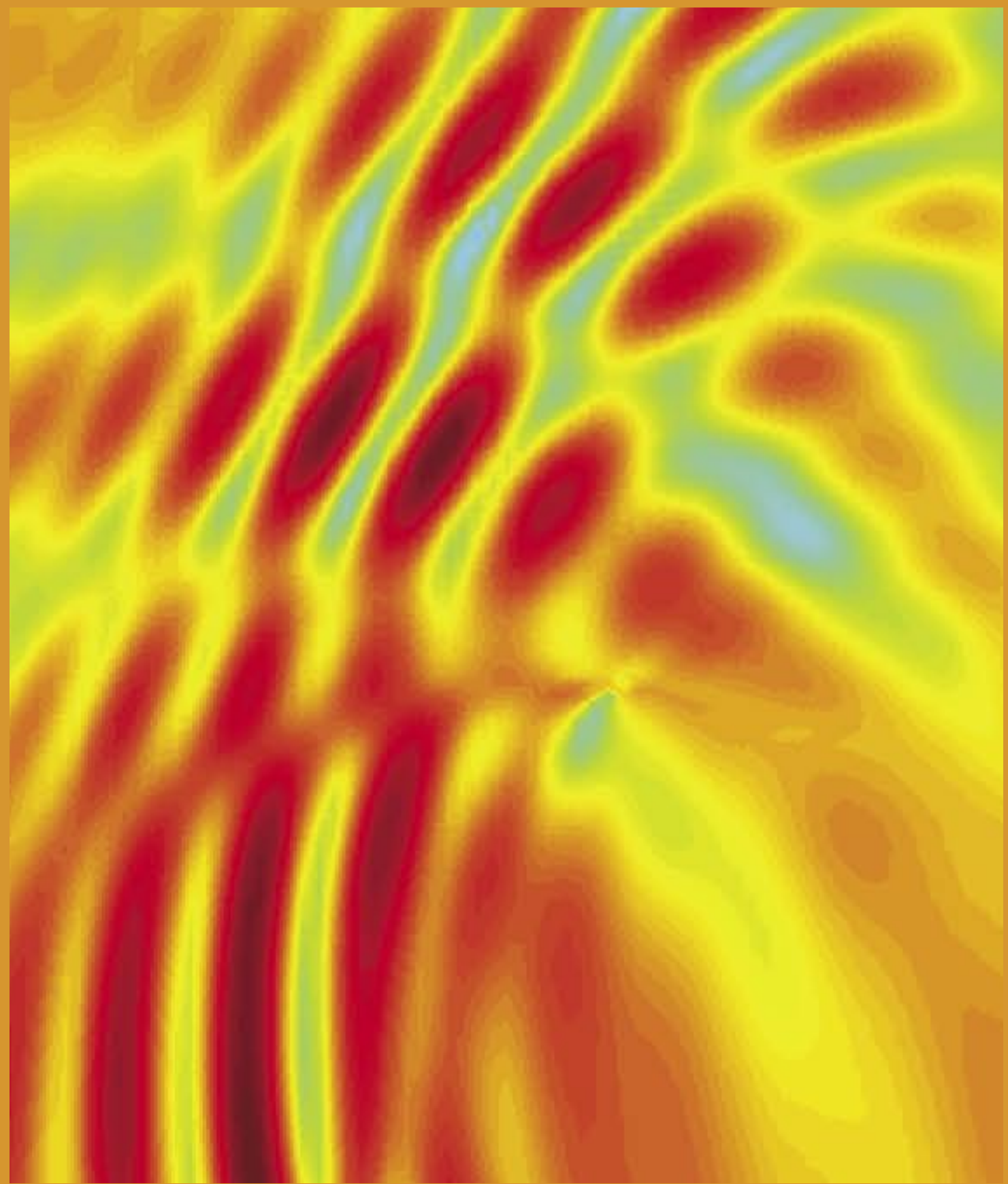
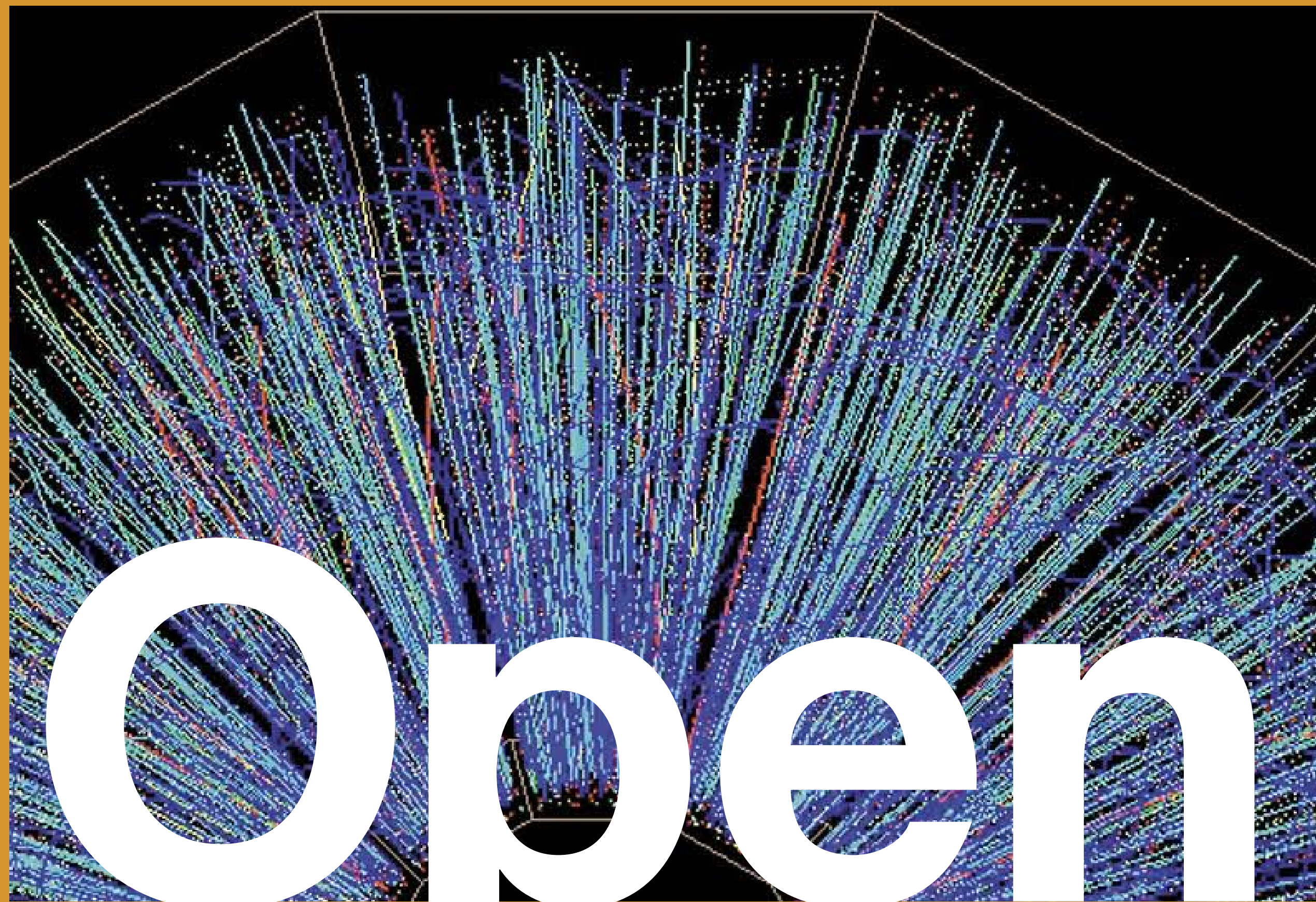
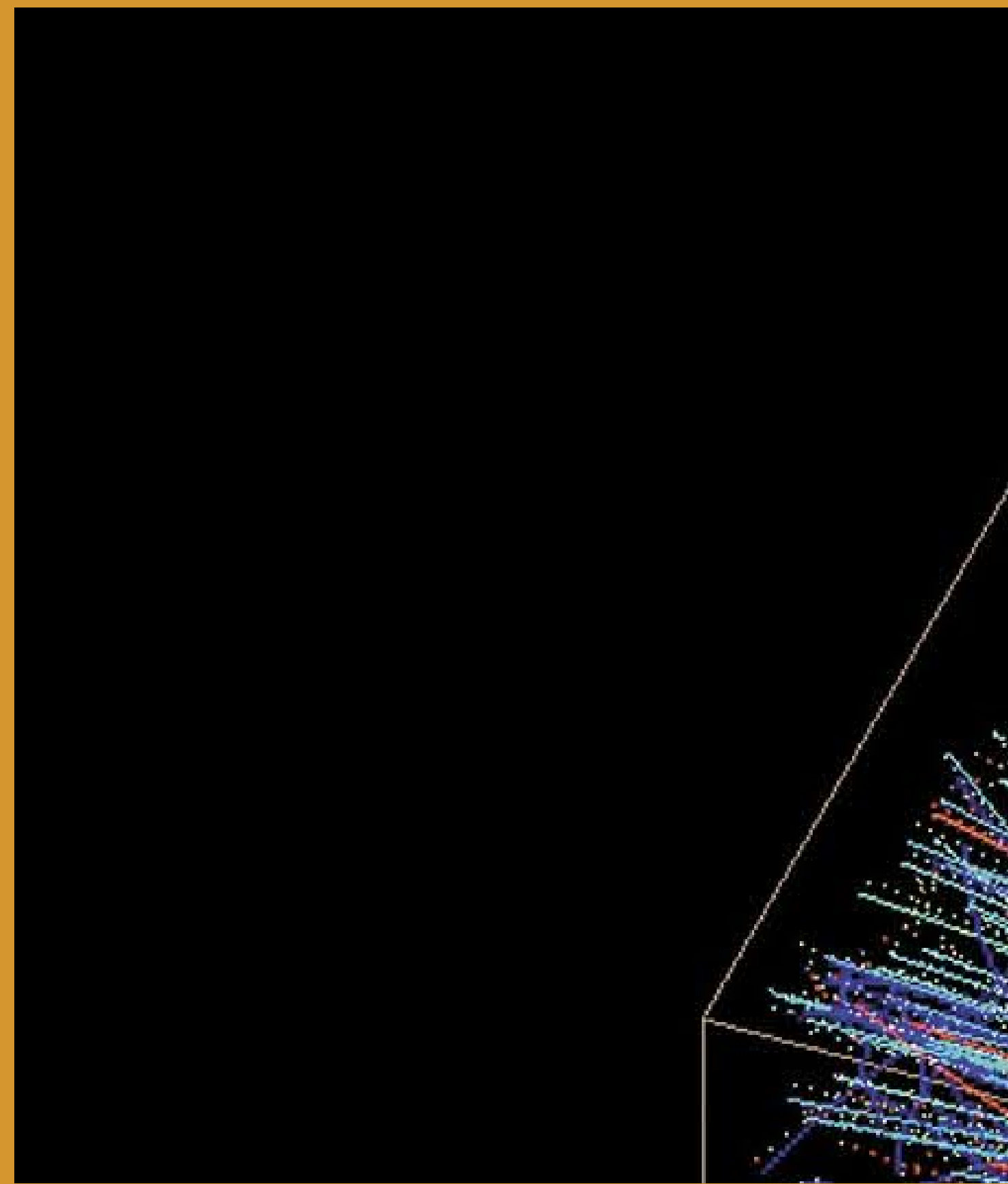
Hundreds of physicists collaborating on Fermilab's DZero and CDF experiments are beginning to rely on grid computing in their search for the nature of matter and energy. Facilities in six countries around the globe are now churning through 250 terabytes of DZero data, processing the raw events into a form usable for high-precision measurements of known particles and searches for completely new phenomena.



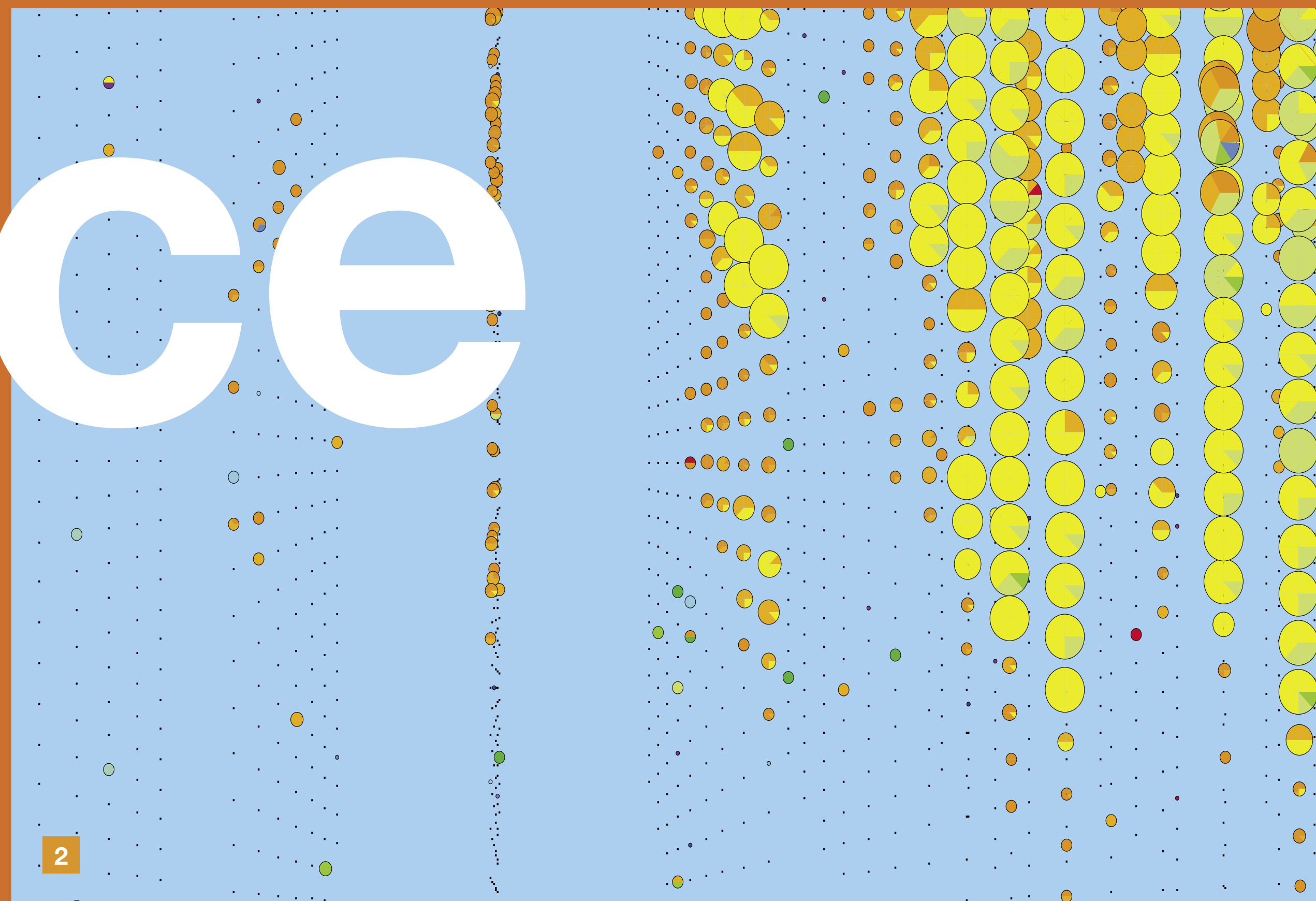
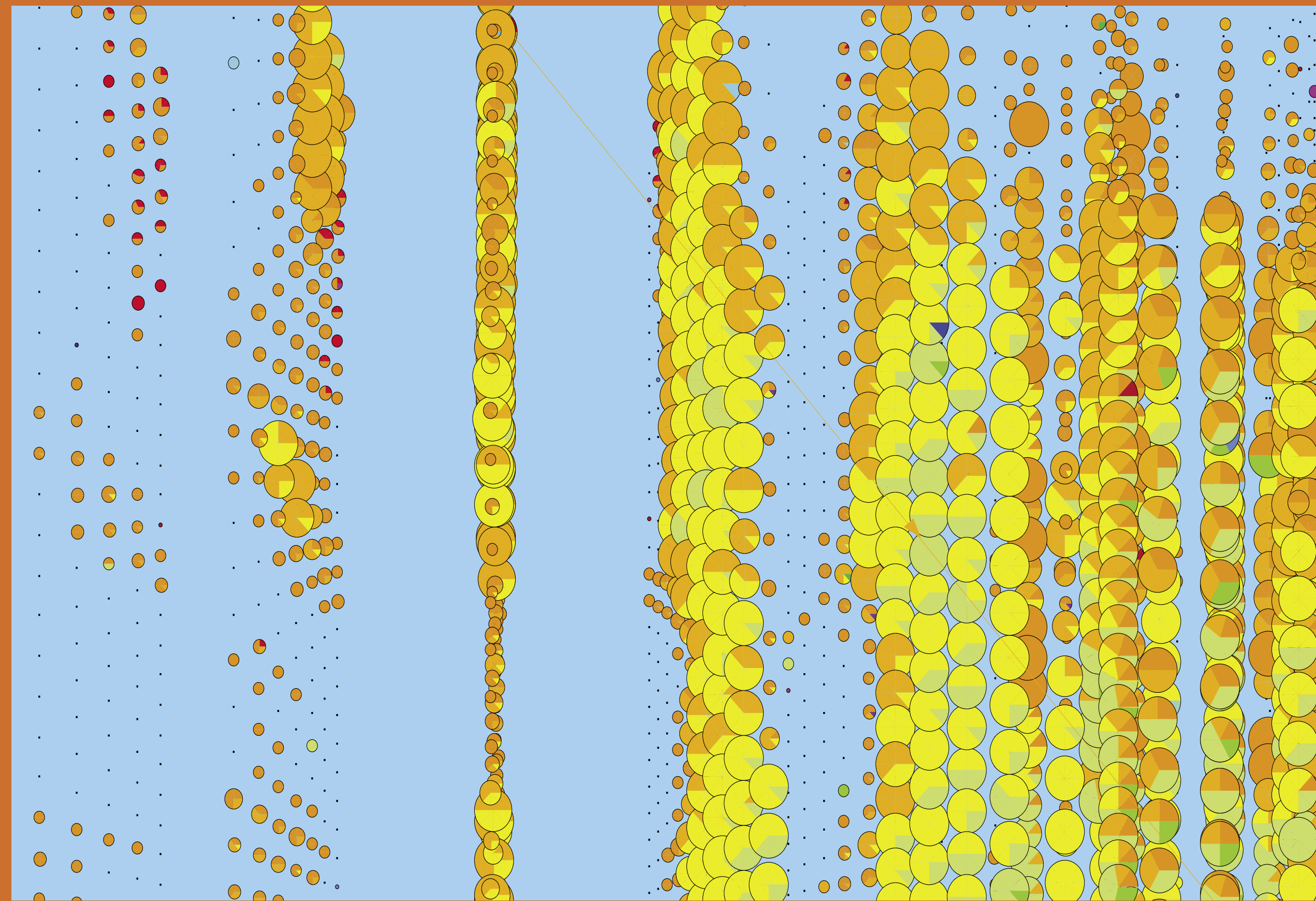
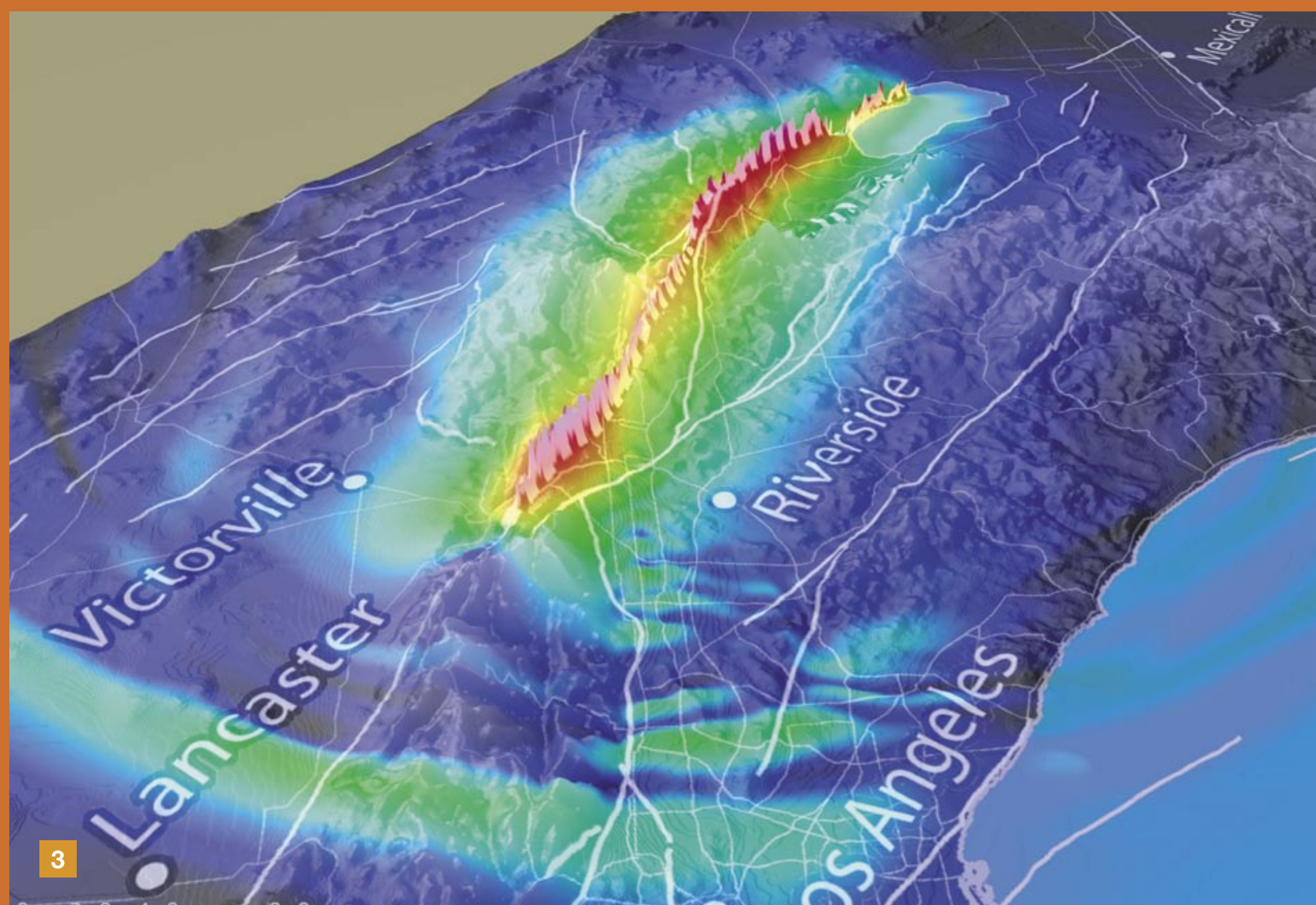
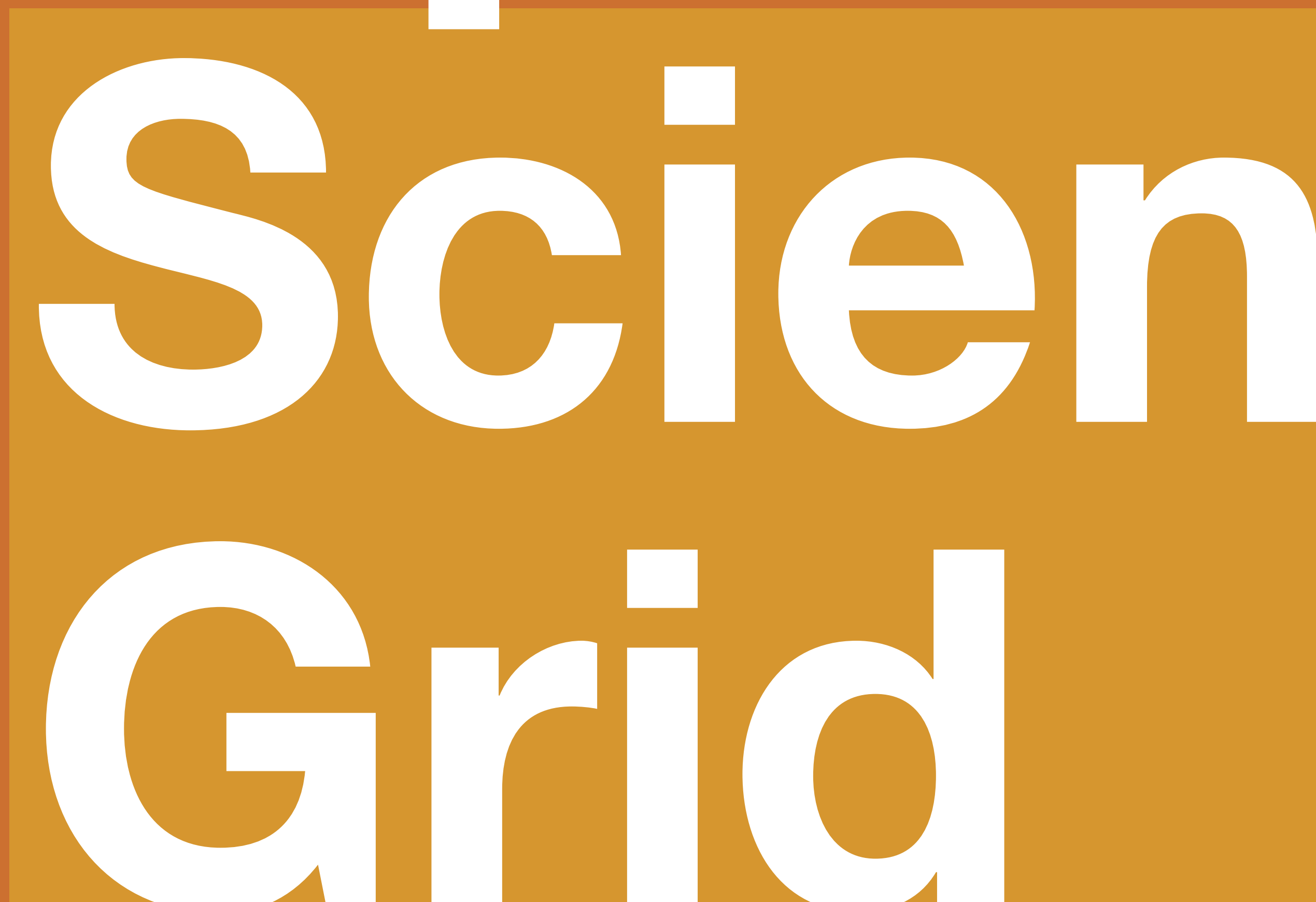
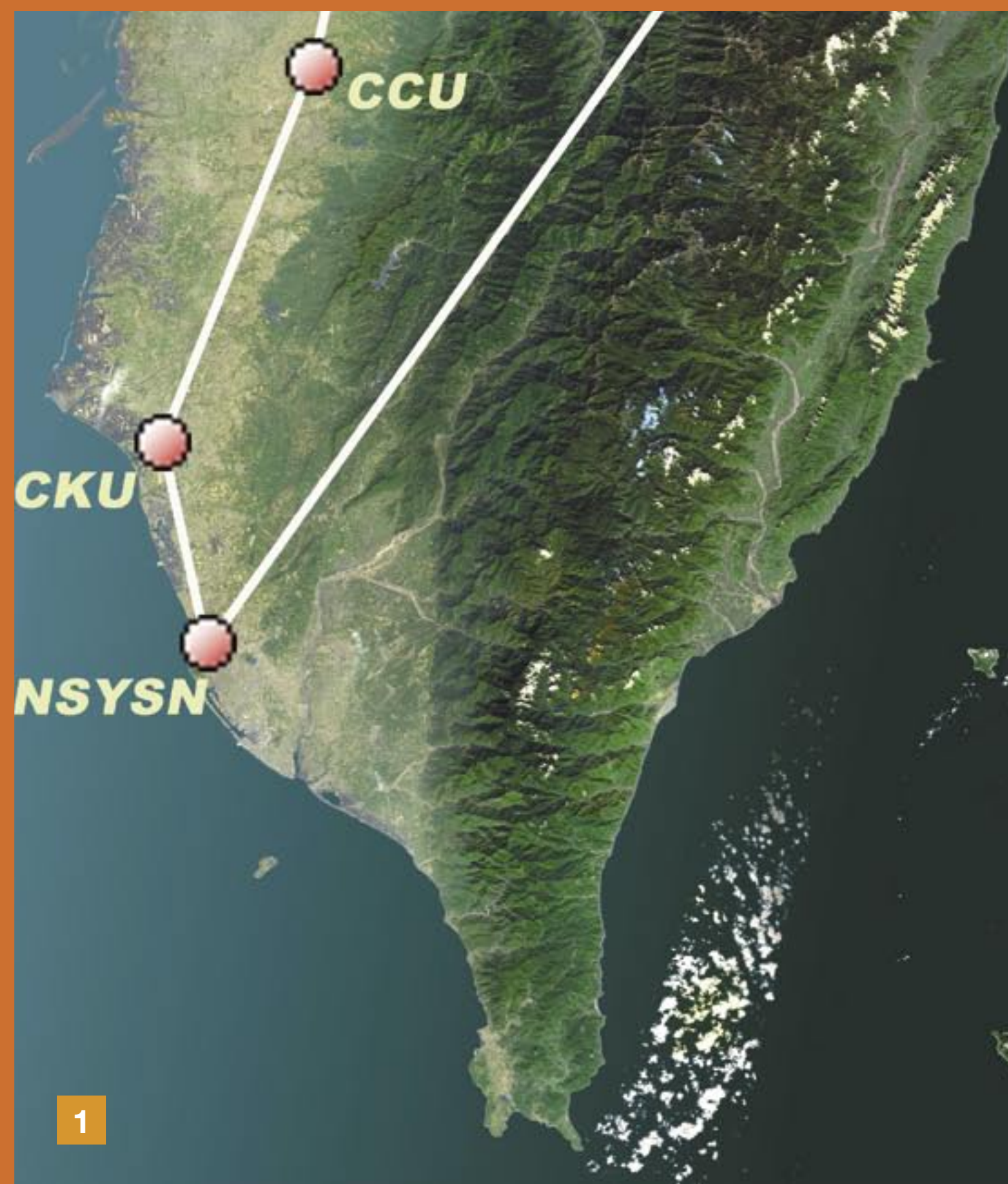
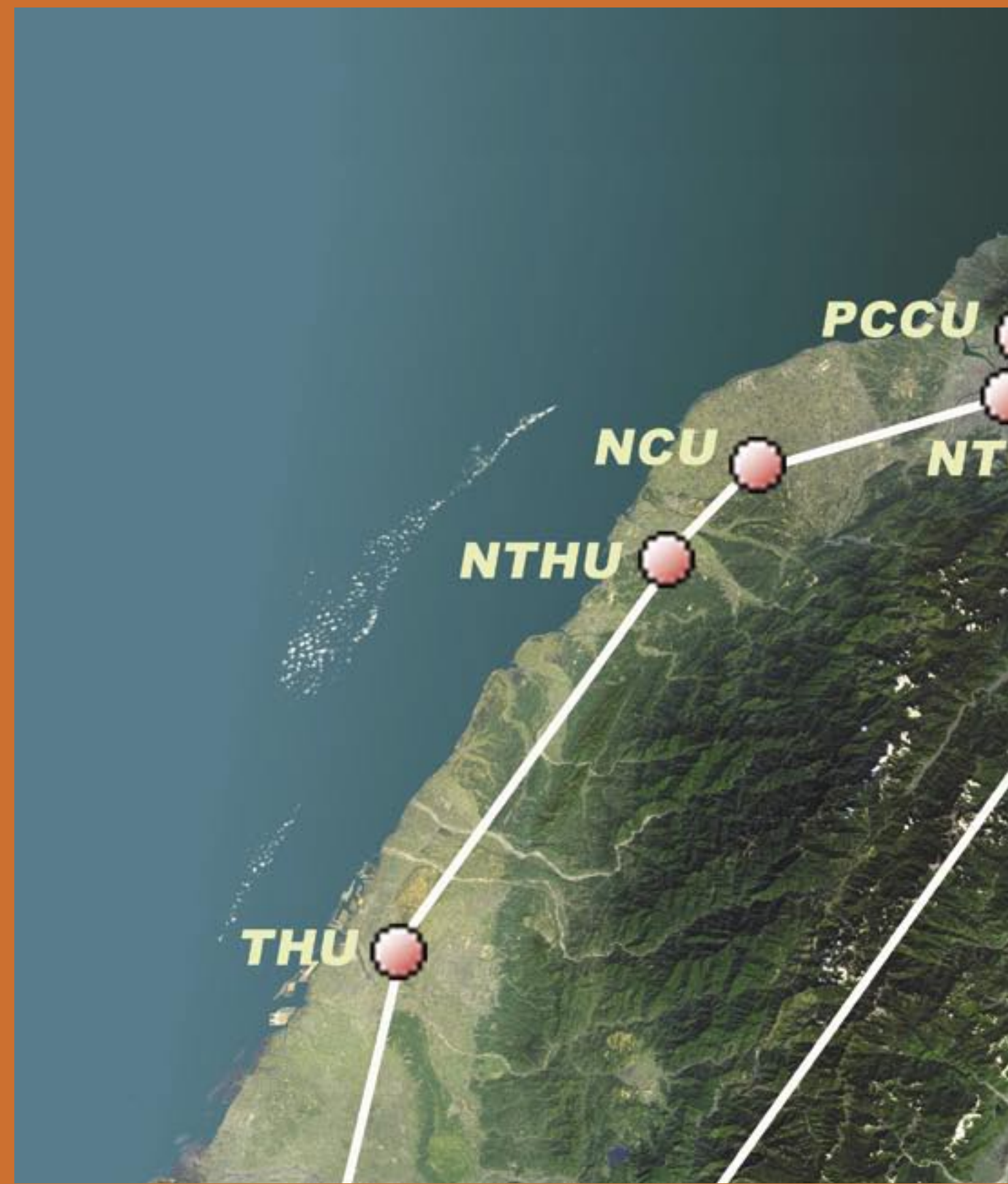
*The Open Science Grid is a national distributed computing infrastructure built by research groups from U.S. universities and national laboratories that supports a broad scientific community. Researchers from diverse scientific fields contribute to the OSG and benefit from access to a range of computational and storage resources, tools to advance national and international collaboration, and a framework to share resources and applications across boundaries.*



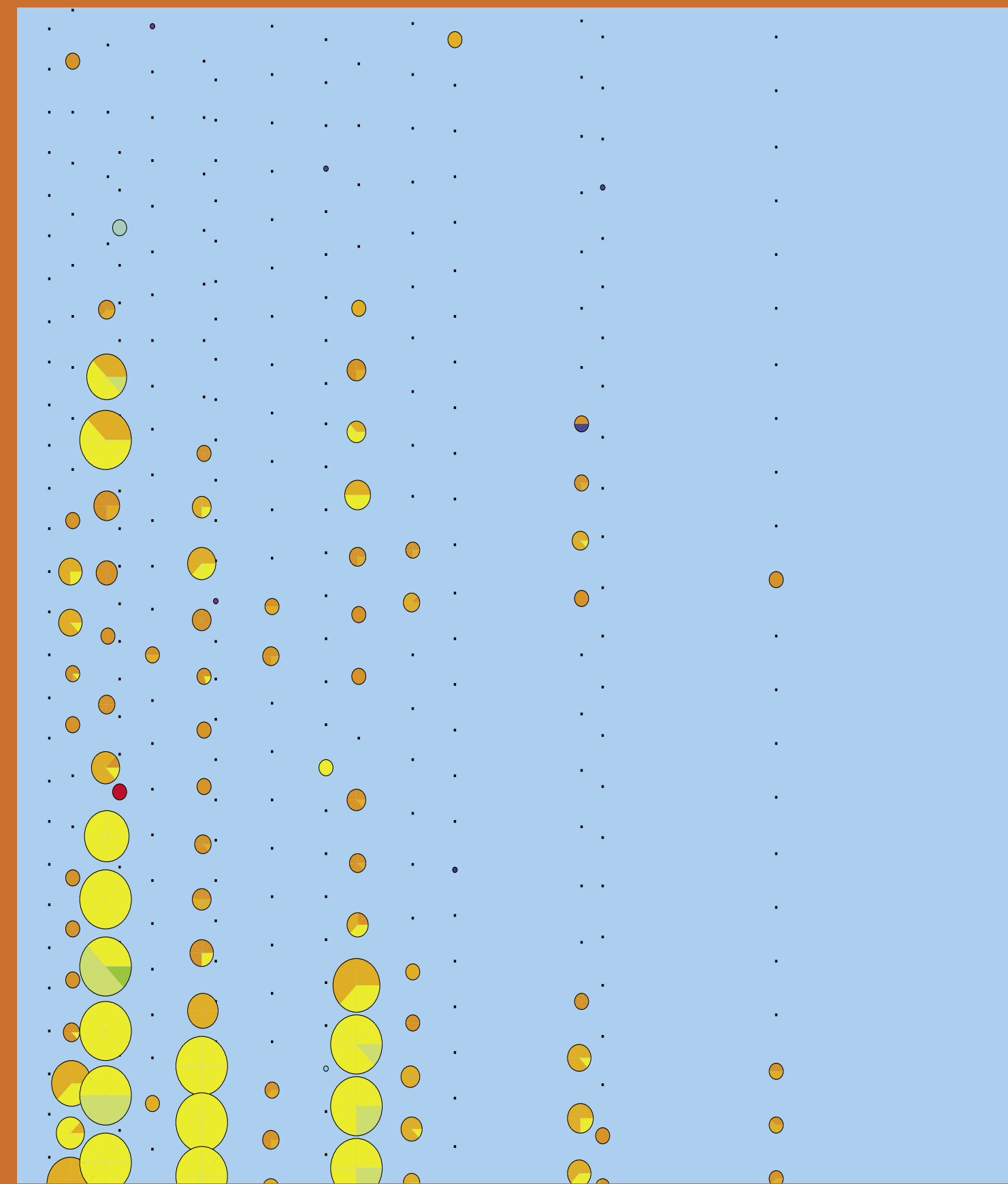
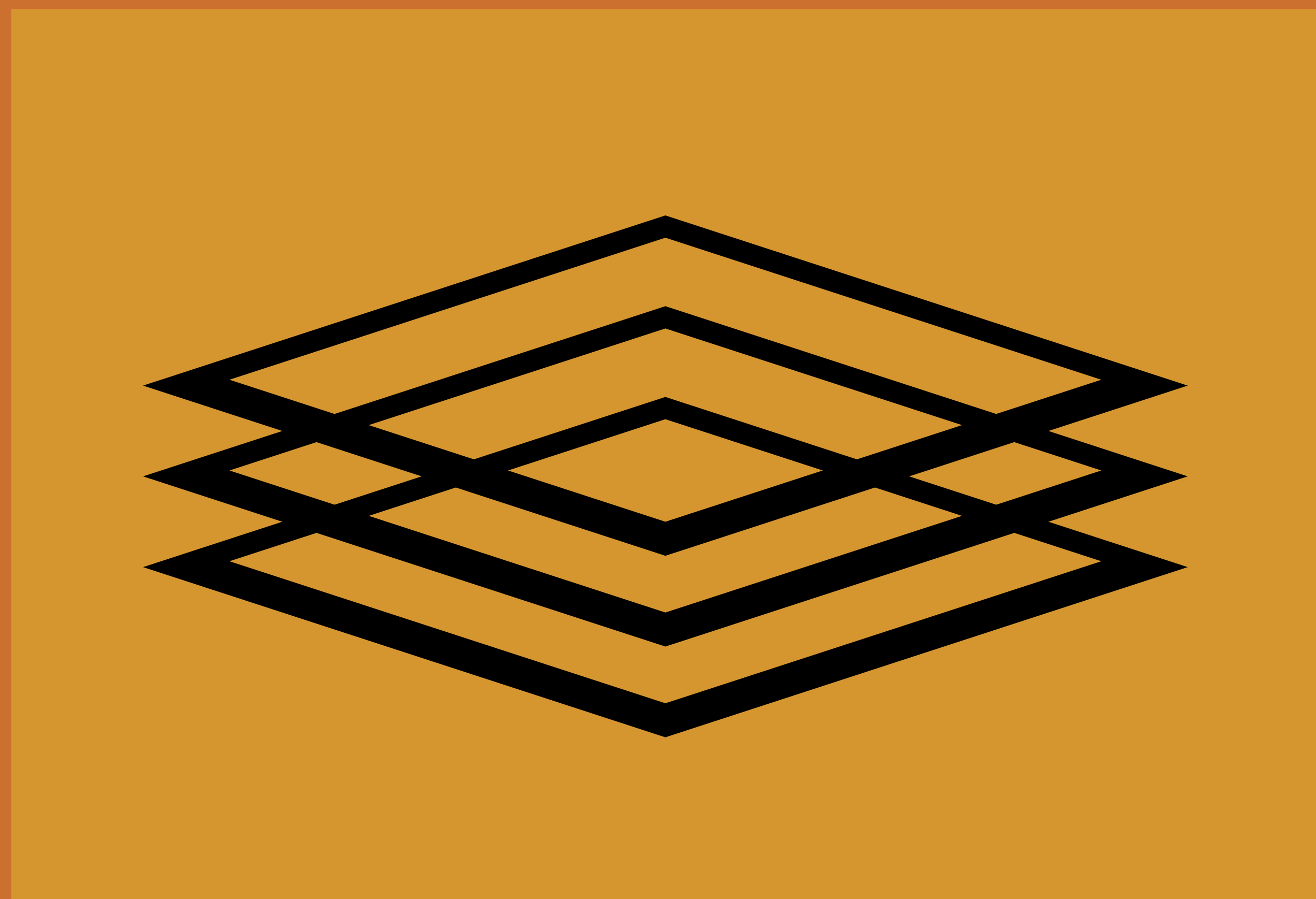




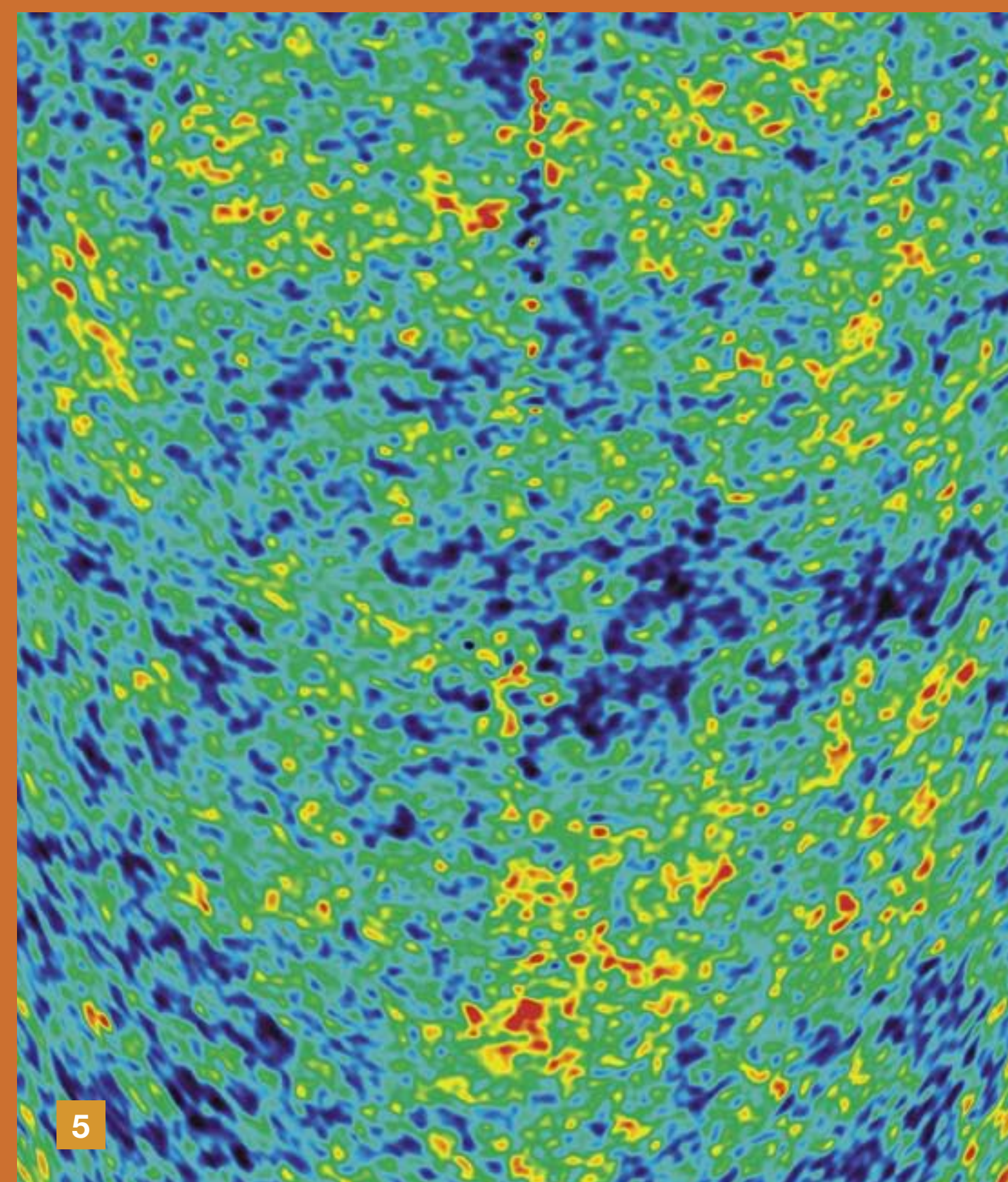
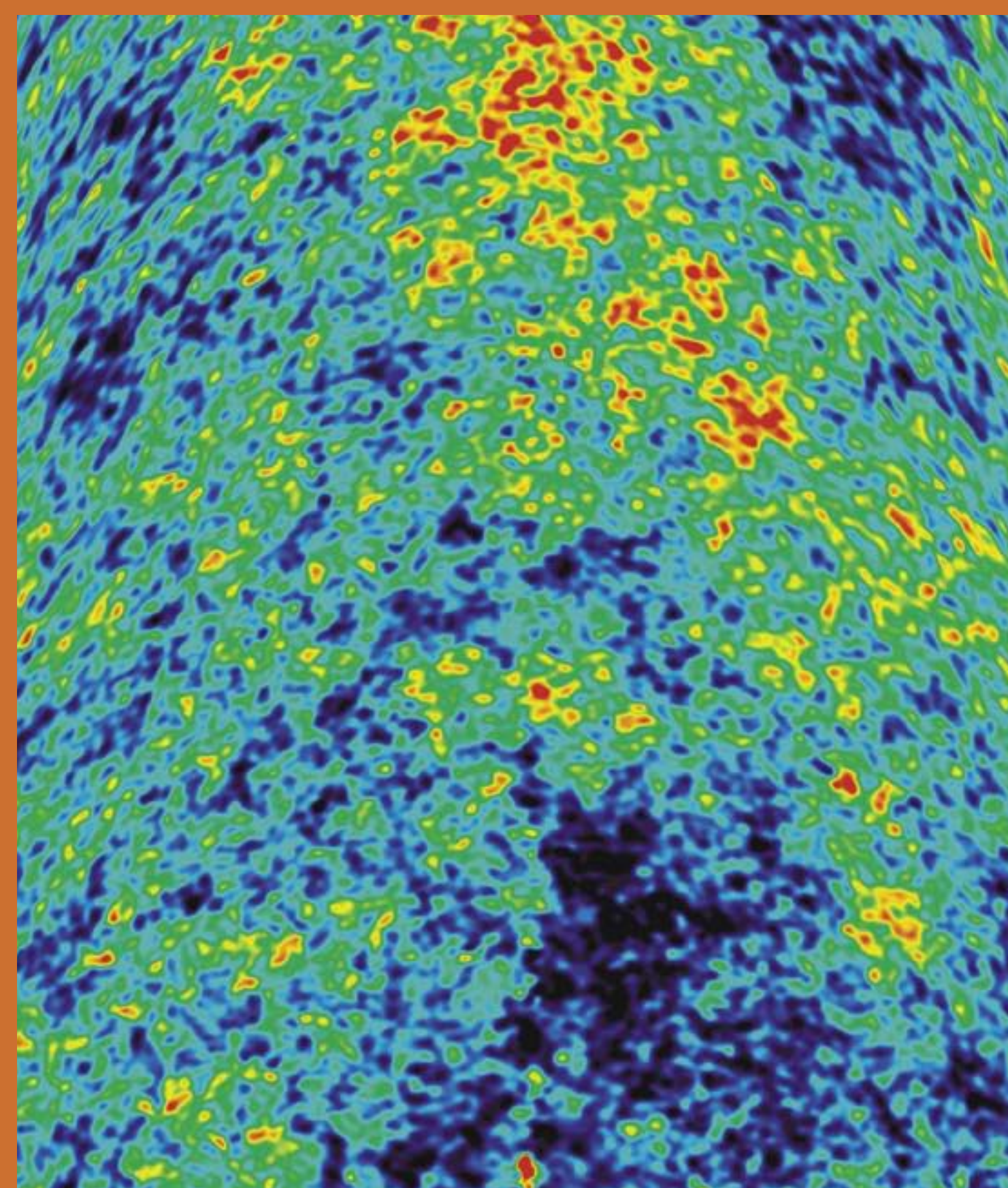




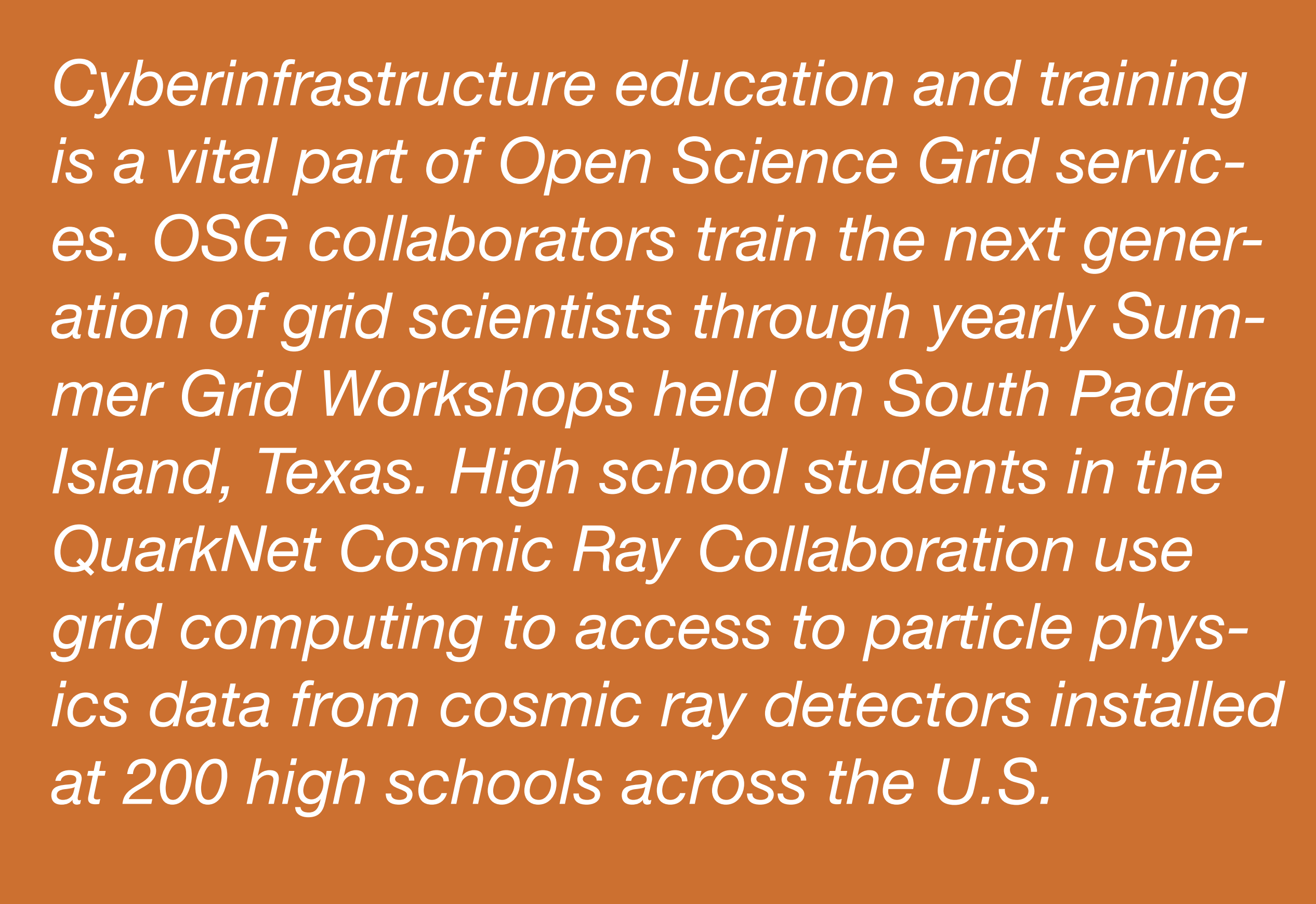
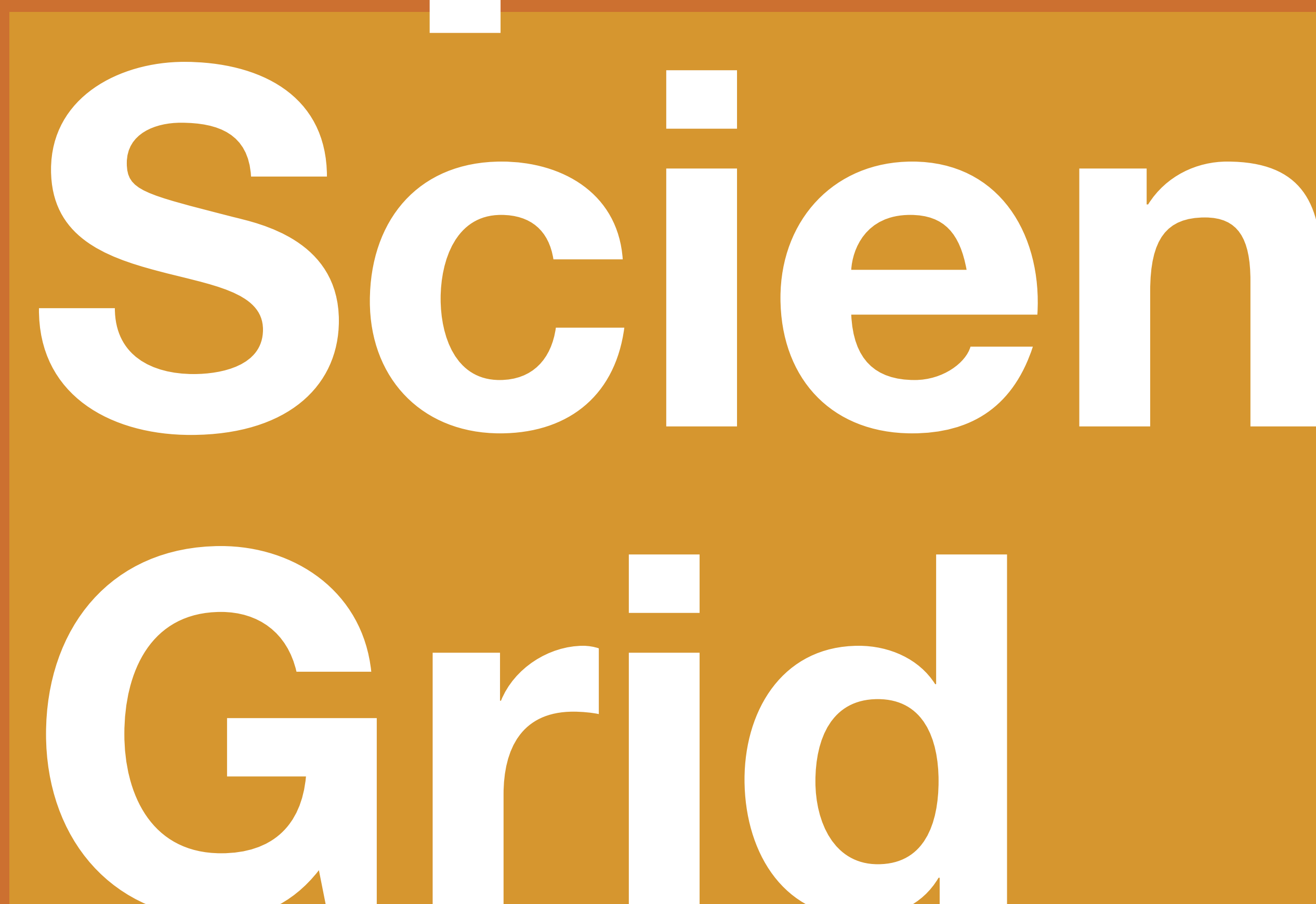
For Open Science Grid members' global research projects to succeed, they must combine resources from different computing infrastructures. The OSG and its partner grids in the U.S., Europe and Asia work jointly to provide users with a worldwide interoperable infrastructure. Scientists will be able to use gateways to run the same application on different grids, and computer science researchers are building bridges between different infrastructures to allow them to communicate freely.



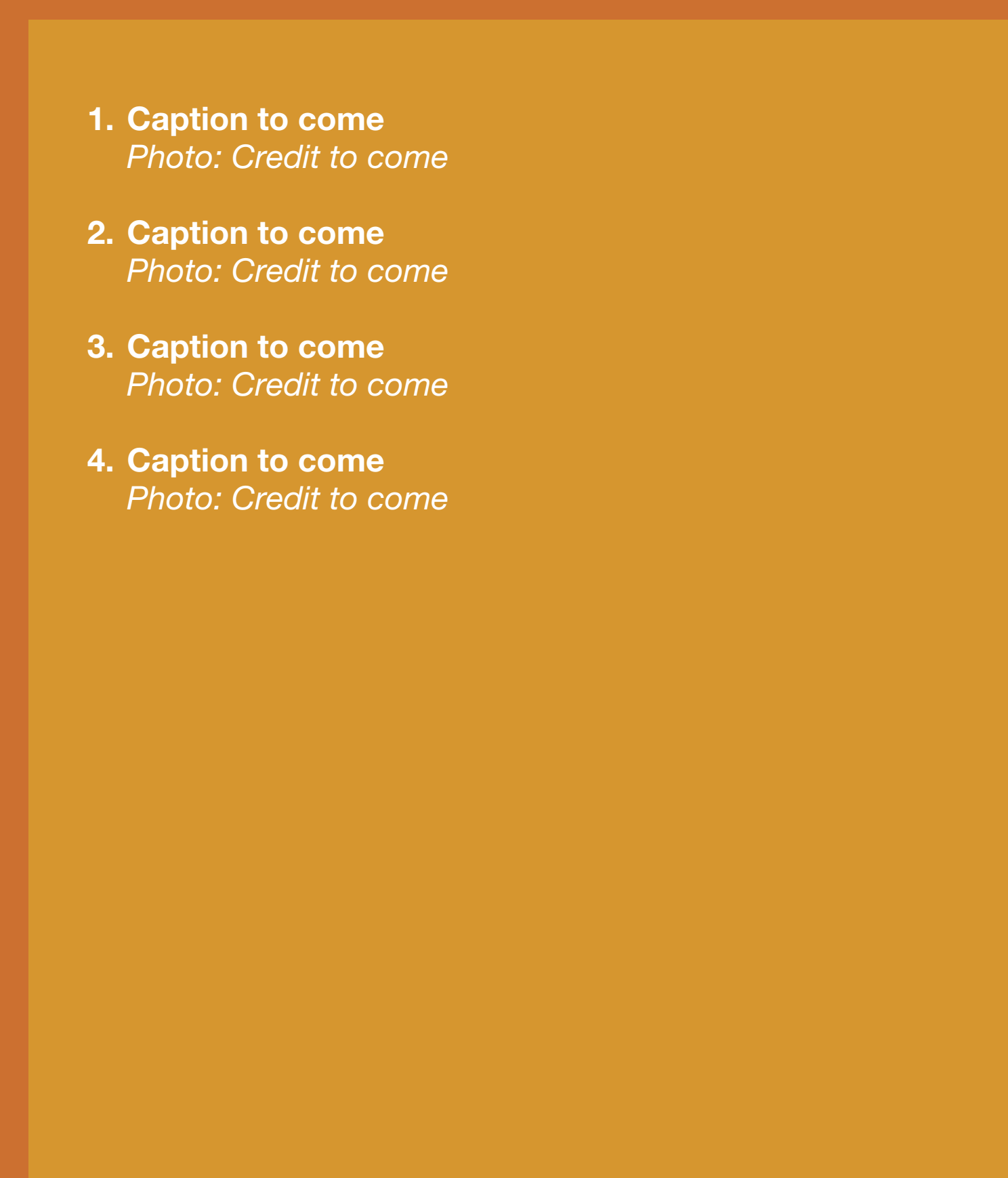
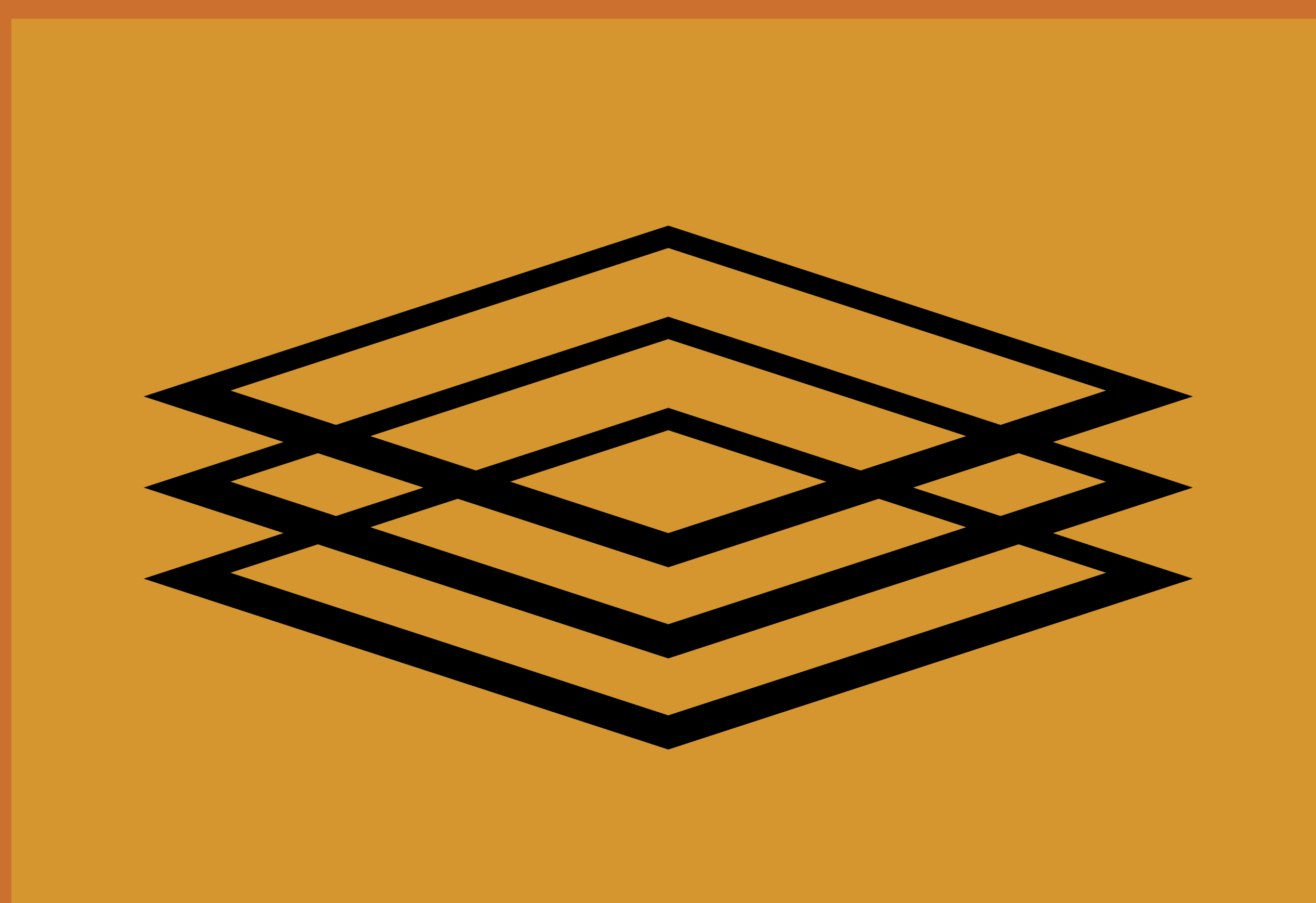
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The Open Science Grid is looking for science researchers, middleware developers, resource providers and grid projects to join this unique distributed computing infrastructure. Over 20 member organizations representing hundreds of researchers and over 35 sites on three continents contribute to the OSG and benefit from access to shared resources worldwide.



Cyberinfrastructure education and training is a vital part of Open Science Grid services. OSG collaborators train the next generation of grid scientists through yearly Summer Grid Workshops held on South Padre Island, Texas. High school students in the QuarkNet Cosmic Ray Collaboration use grid computing to access to particle physics data from cosmic ray detectors installed at 200 high schools across the U.S.

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